

The NATION'S BUILDING STONE

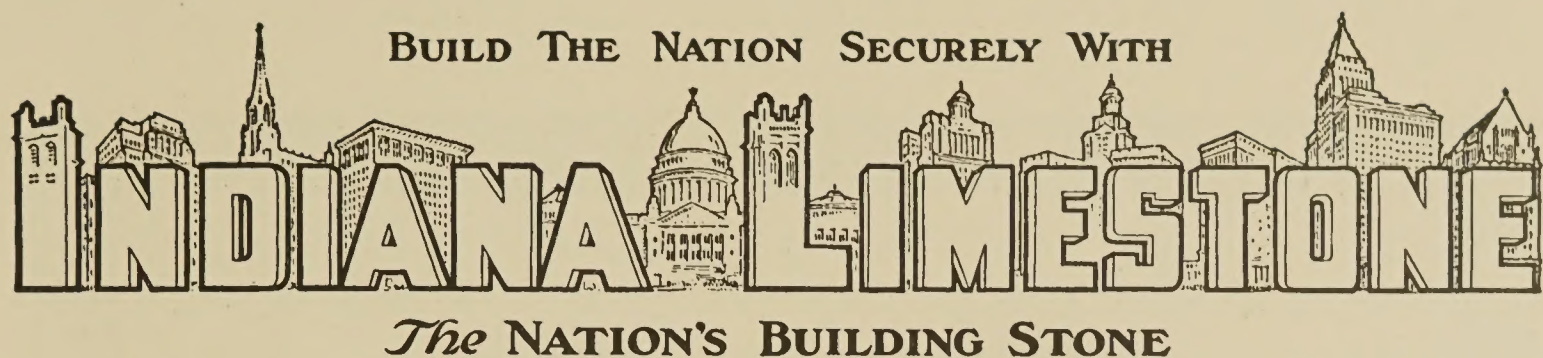
INDIANA LIMESTONE



INDIANA LIMESTONE
for SCHOOL & COLLEGE BUILDINGS
Volume 6 of the Indiana Limestone Library—Series B



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Indiana
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VOLUME VI

SERIES B

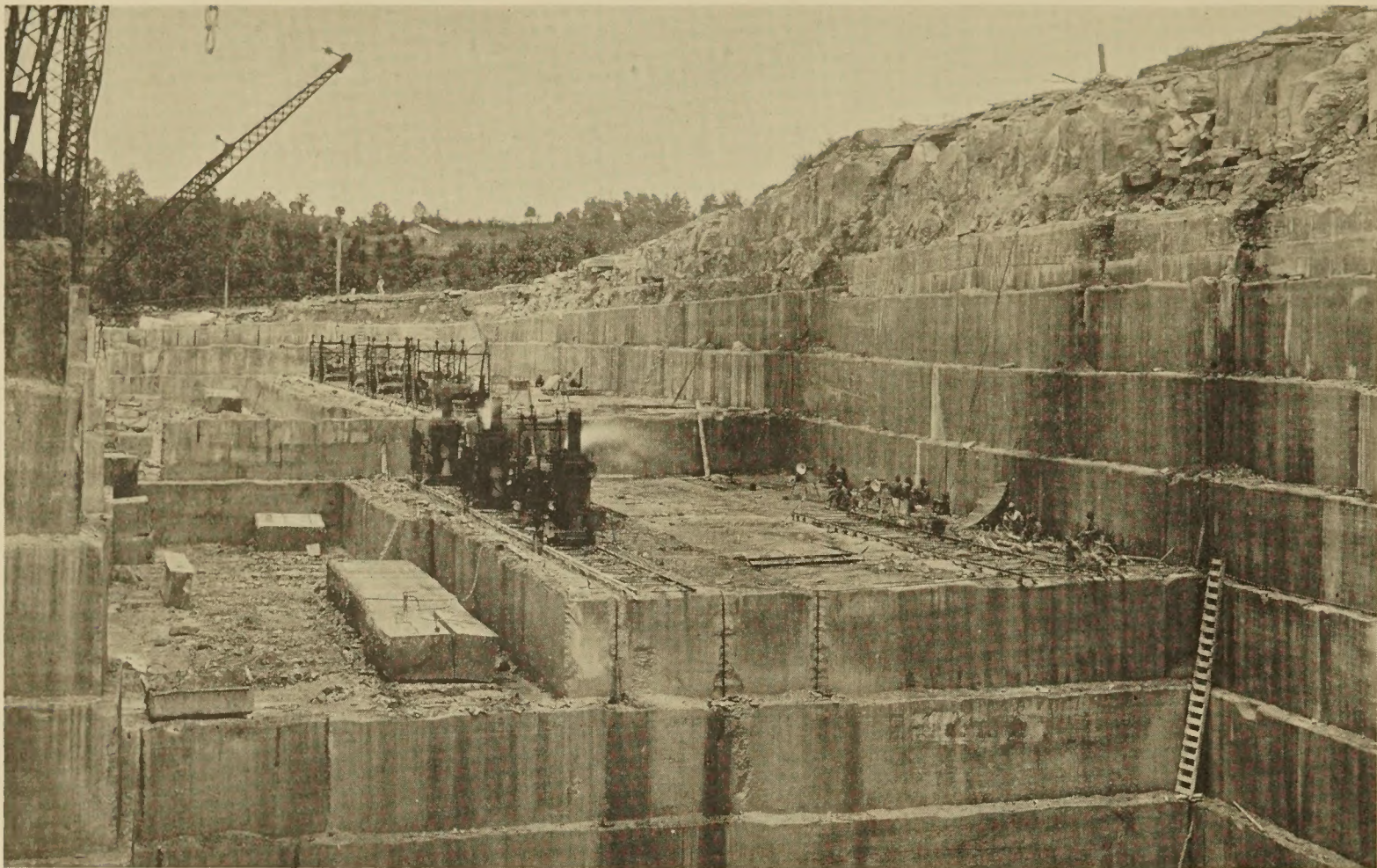
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Indiana Limestone Quarrymen's Association
BEDFORD, INDIANA



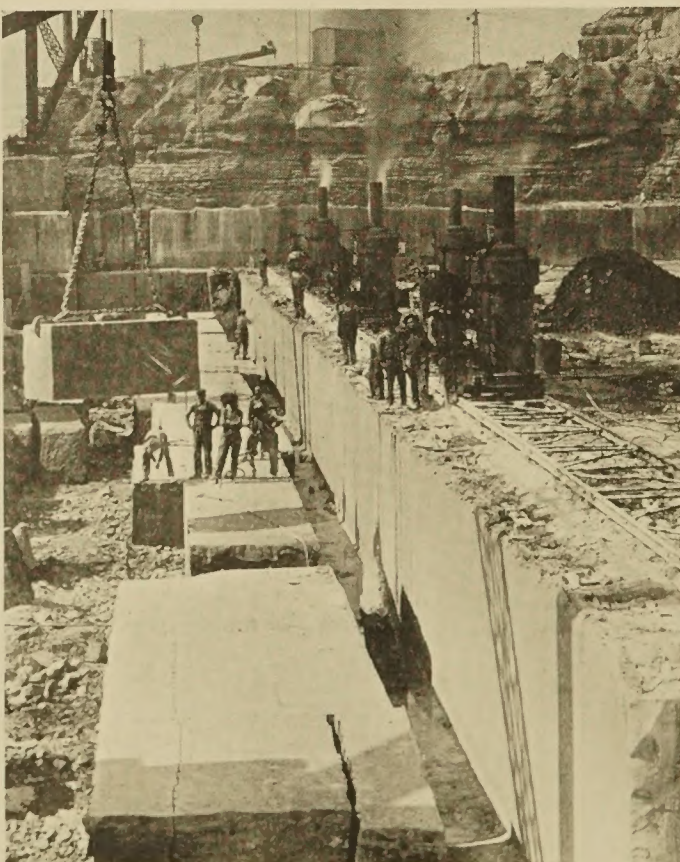
INDIANA LIMESTONE QUARRY VIEW

THE above illustration shows a typical quarry view in one of the larger quarries which produce the now famous INDIANA OÖLITIC LIMESTONE formerly called BEDFORD STONE. The stone, it will be noted, is not quarried by blasting, but is cut in huge blocks from the solid ledge by machinery. No explosives are used, excepting for the removal of the overburden or waste top rock where it occurs on top of the Oölitic stone ledge.

The building stone is then quarried by what is known as the channeling process. Channel cuts are made in the solid ledge from 4 to 6 feet apart and from 8 to 12 or even 14 feet in depth. These cuts may be of any length from 20 to 100 feet or more, according to the length that it may be desired to quarry at a single operation. The size of these huge blocks of stone can be gained by a comparison with the men in quarry hole.

This remarkable ledge of limestone is from 40 to over 70 feet in depth in various sections of the deposit, all of reasonably fine, close grained and fairly uniform texture, thoroughly

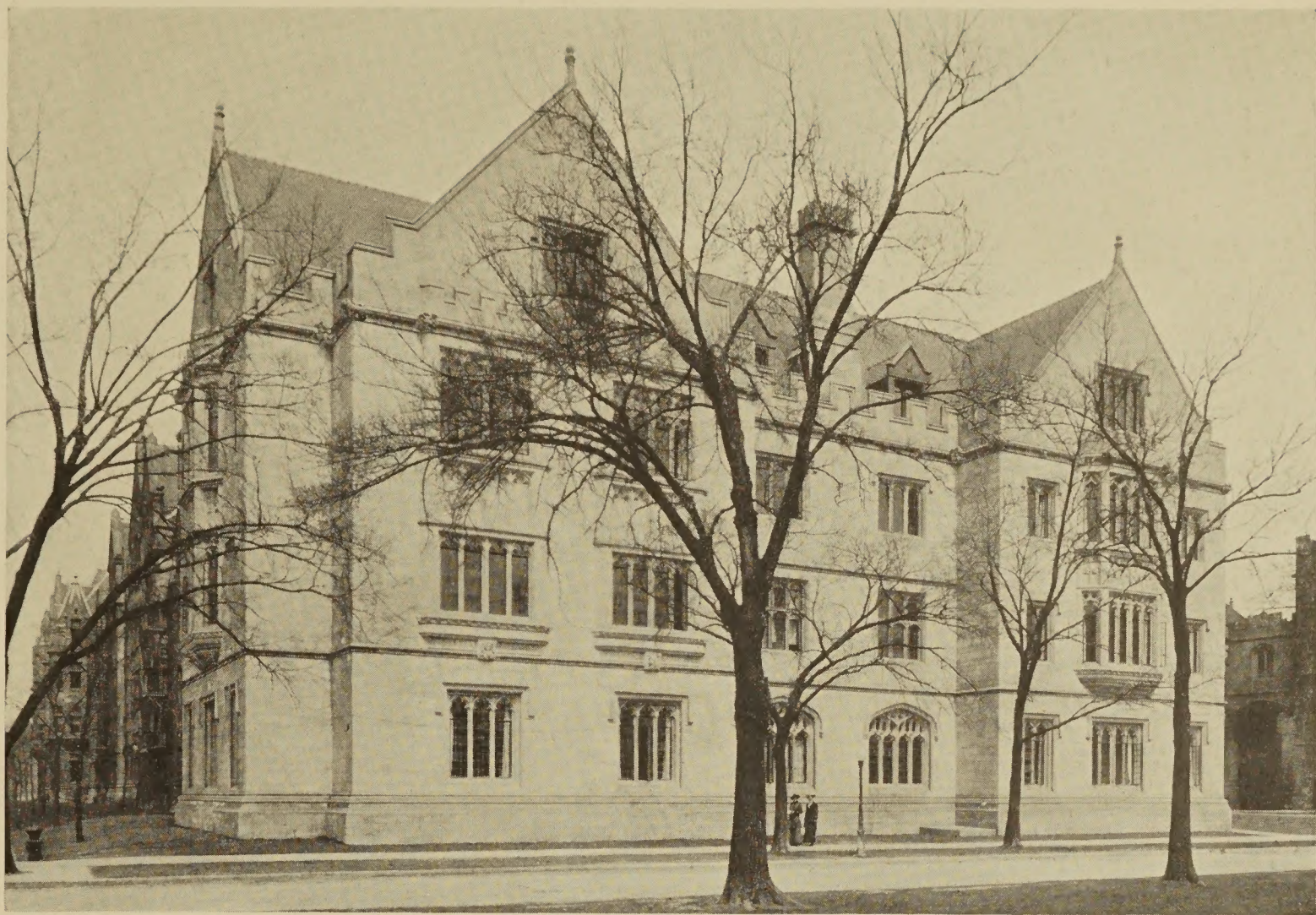
sound and possessing every desirable structural quality. There is no appreciable stratification; the stone having a remarkably uniform strength in all directions, is always treated as a freestone.



In the lower view, steam channeling machines are shown. The larger illustration shows a view in a large quarry, where both steam and double electric channeling machines are used. The upper view shows clearly the channel cuts that have been made preparatory to splitting these huge blocks of stone from the quarry ledge.

Machinery is also used throughout for the sawing, planing, turning and for many of the cutting operations employed in converting these huge rough blocks of stone into the beautiful cut and carved material for school and college buildings. This industry is one of the most highly developed and important quarry industries in the world, the stone being shipped from its central location in the southern part of Indiana, to the cutting plants for work in all sections of the country.

For further information regarding production and characteristics of INDIANA LIMESTONE see Volume I, INDIANA LIMESTONE Library



CLASSICS BUILDING, UNIVERSITY OF CHICAGO, Chicago, Ill.

SHEPLEY, RUTAN & COOLIDGE, Architects

THE USE OF STONE, especially INDIANA LIMESTONE in School and College buildings, is a subject of prime importance to everyone interested in the building of any structures for educational purposes. A consideration of the materials to be used is just as important as a consideration of the style, or type, of design to be employed.

In fact, the consideration of both these factors should proceed from the inception of the plans.

When considering the planning of a school, whether it be the grade school or the college or university building, the importance of the building itself and its lasting impression on the youthful mind and also upon the character of the student cannot be entirely overlooked. In fact this should be given more consideration than has often been the case.

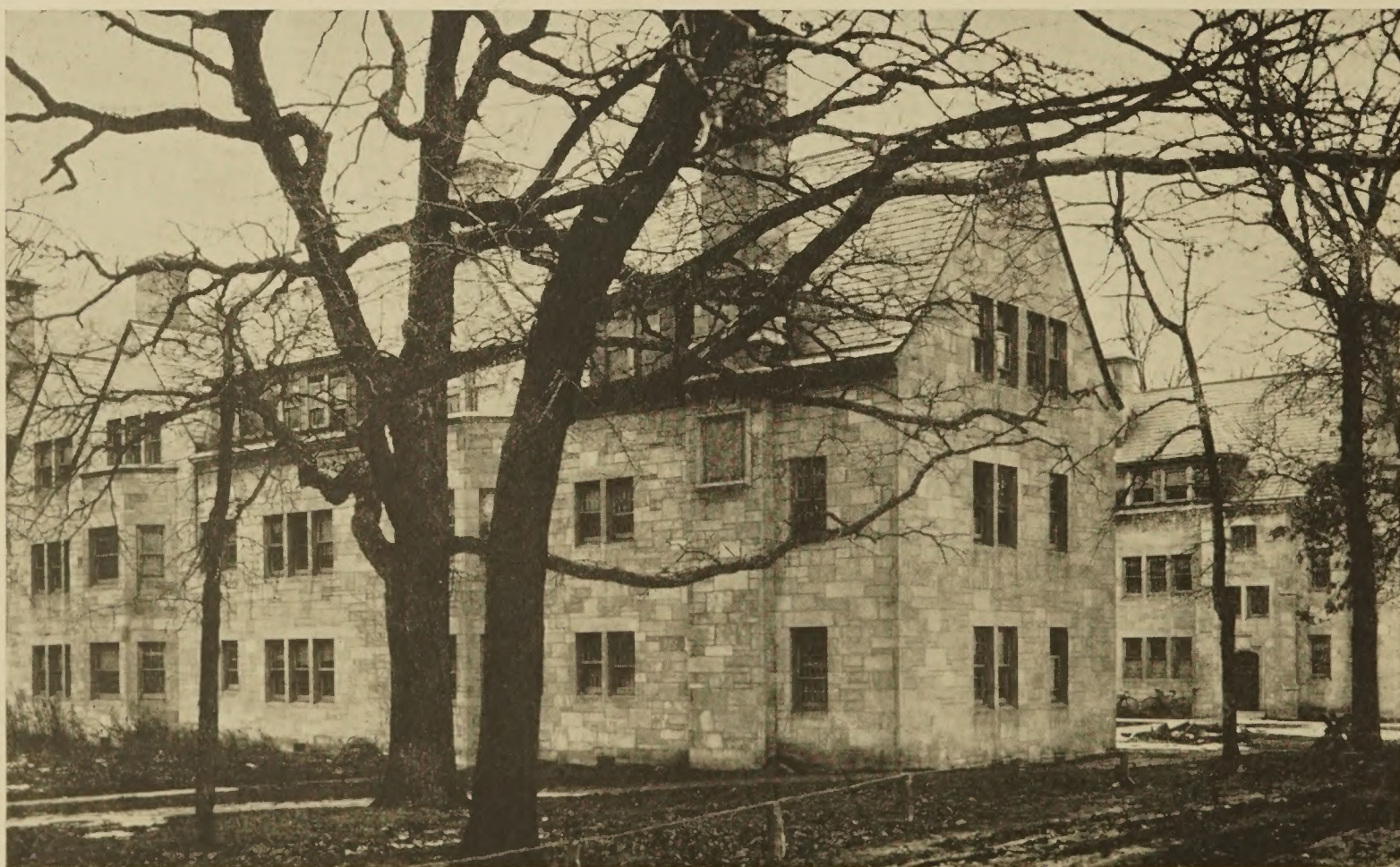
Architects who have specialized in school buildings and school boards who have studied the subject during the last decade, have given this factor in the problem a lot more consideration than was formerly the custom. *See statements of Architects quoted on pages 56 and 57.*

The element of beauty must not be overlooked but what is even more important is the element of truth. Sound, worth-while permanent material, intelligently used in an economical way, is much more important than applied decoration in any form. This goes hand in hand with a logical treatment of the design along lines that are expressive of the purpose and character of the structure, as a seat of learning, a result never satisfactorily achieved by designs that were not logical or appropriate to the character of an educational institution.



TUCK HALL, DARTMOUTH COLLEGE, Hanover, N. H.
Brick walls with Buff INDIANA LIMESTONE trim

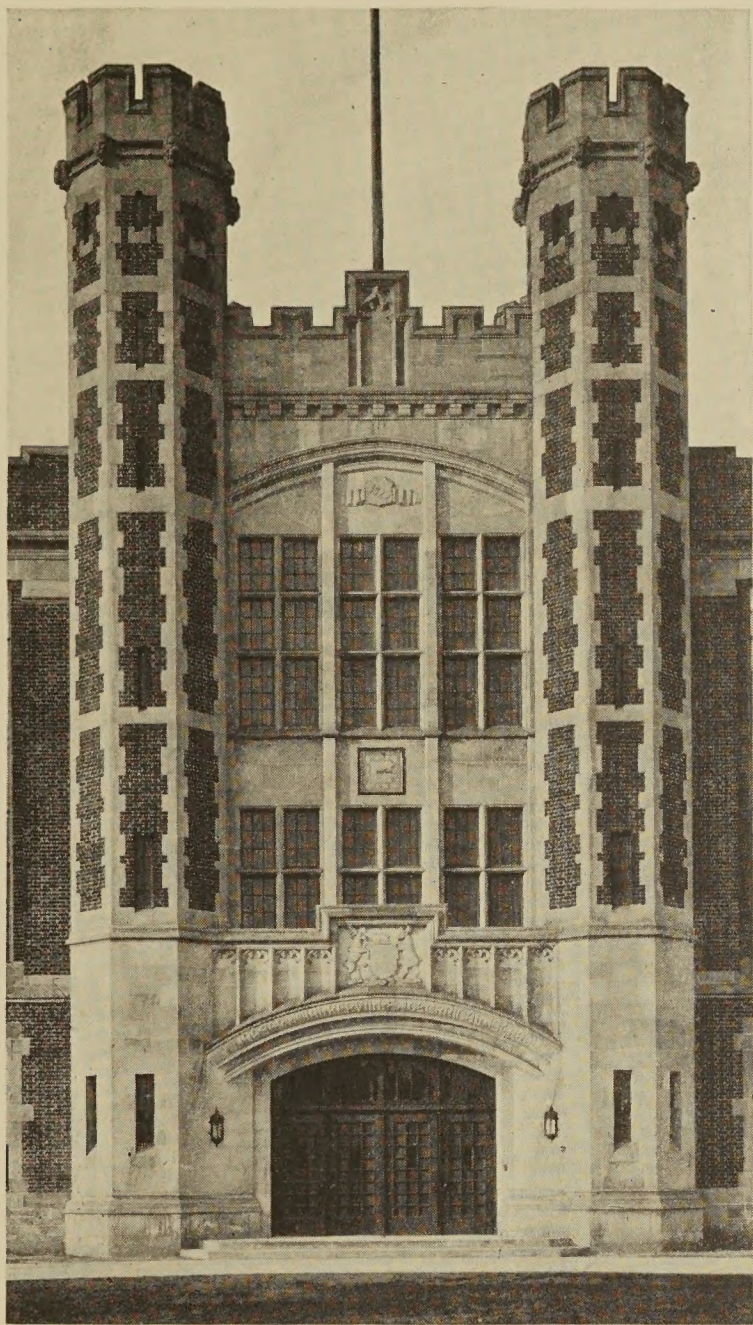
CHARLES A. RICH, Architect



GARRETT BIBLICAL INSTITUTE, Evanston, Ill.

HOLABIRD & ROCHE, Architects

An interesting example of the use of QUARRY-RUN INDIANA LIMESTONE laid up as a smooth finish RANDOM ASHLAR. See pages 42 and 69 for other examples of this class of wall facing



Entrance Bay TECHNICAL SCHOOL for
WINDSOR & WALKERVILLE, Ontario, Canada
CAMERON & RALSTON, Architects

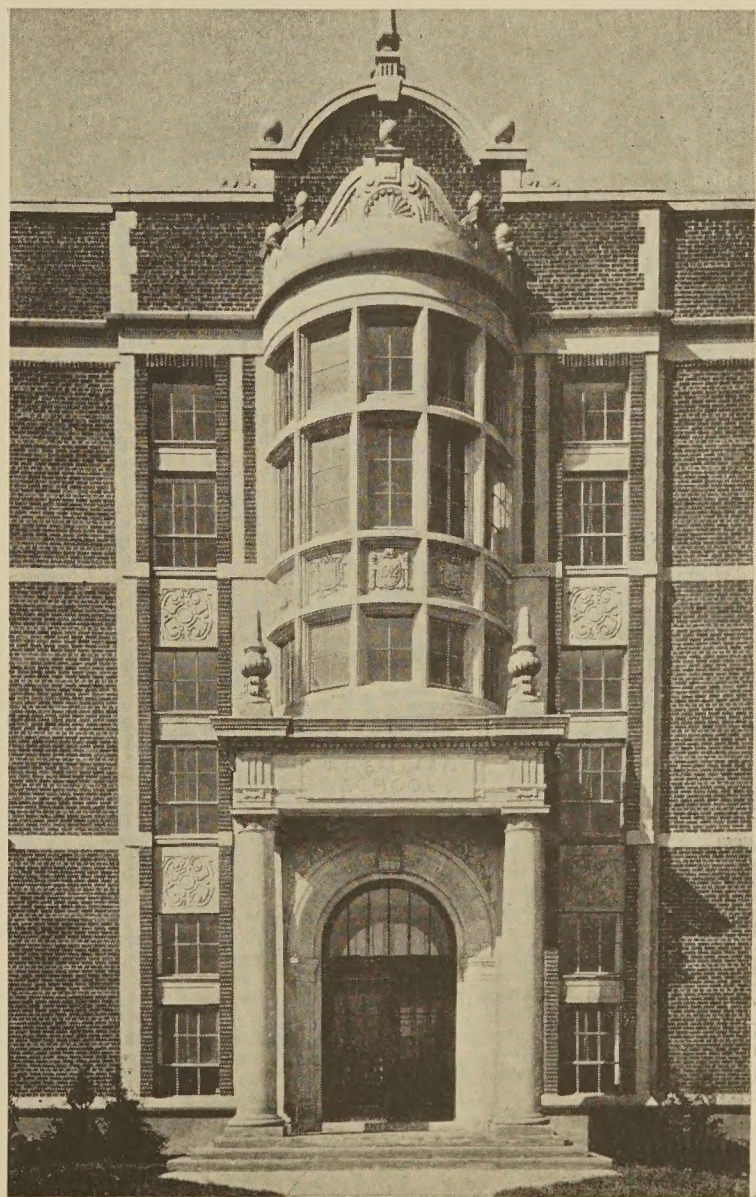
The building must have dignity, but at the same time this should always be expressed in a scholastic way, in keeping with the best traditions of the design of educational institutions, in order to achieve the best, most logical and therefore most satisfying results.

The miniature Court House, the enlarged residence, or the factory or warehouse type of school building, will not serve the purpose as well as the more appropriately designed structure, and these types, unfortunately prevalent in some sections at present, are doomed to disappear as time goes on.

Apart from the character of the building as a school or college, there is also the importance of these buildings as civic assets and the part which they play in giving an outward expression of the civic pride of the community.

Outside of the home, there is no other class of building in which the country as a whole is so vitally interested, and no other building that the community as a whole is so dependent upon as a cradle of future development and growth.

In progressive localities, the planning and equipment of these buildings is no longer entrusted to the inexperienced. The best trained specialists are now quite generally employed.



Entrance Bay W. H. BALLARD SCHOOL, Hamilton, Canada
WARREN & McDONNELL, Architects



LIBERAL ARTS BUILDING, UNIVERSITY OF COLORADO, Boulder, Col.

DAY & KLAUDER, Architects

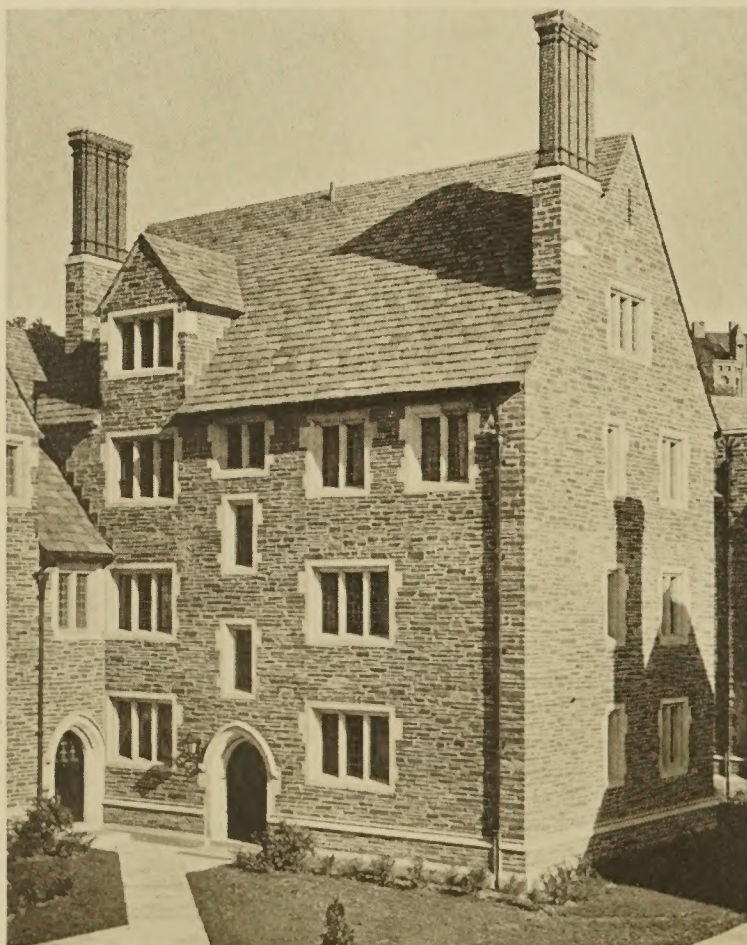
The two buildings on this page provide an interesting contrast in the use of INDIANA LIMESTONE trim with walls of local stone.

The upper building, designed in the Italian style, has walls of a split local stone laid up in a very rugged manner, appropriate to the locality.

The lower building, showing an interesting Gothic treatment, has walls faced with a slaty-shale, varying in color tones of gray, green, blue and brown.

In both instances a delightful contrast is provided by the light color-tone of the Limestone trim.

On the opposite page two fine school buildings



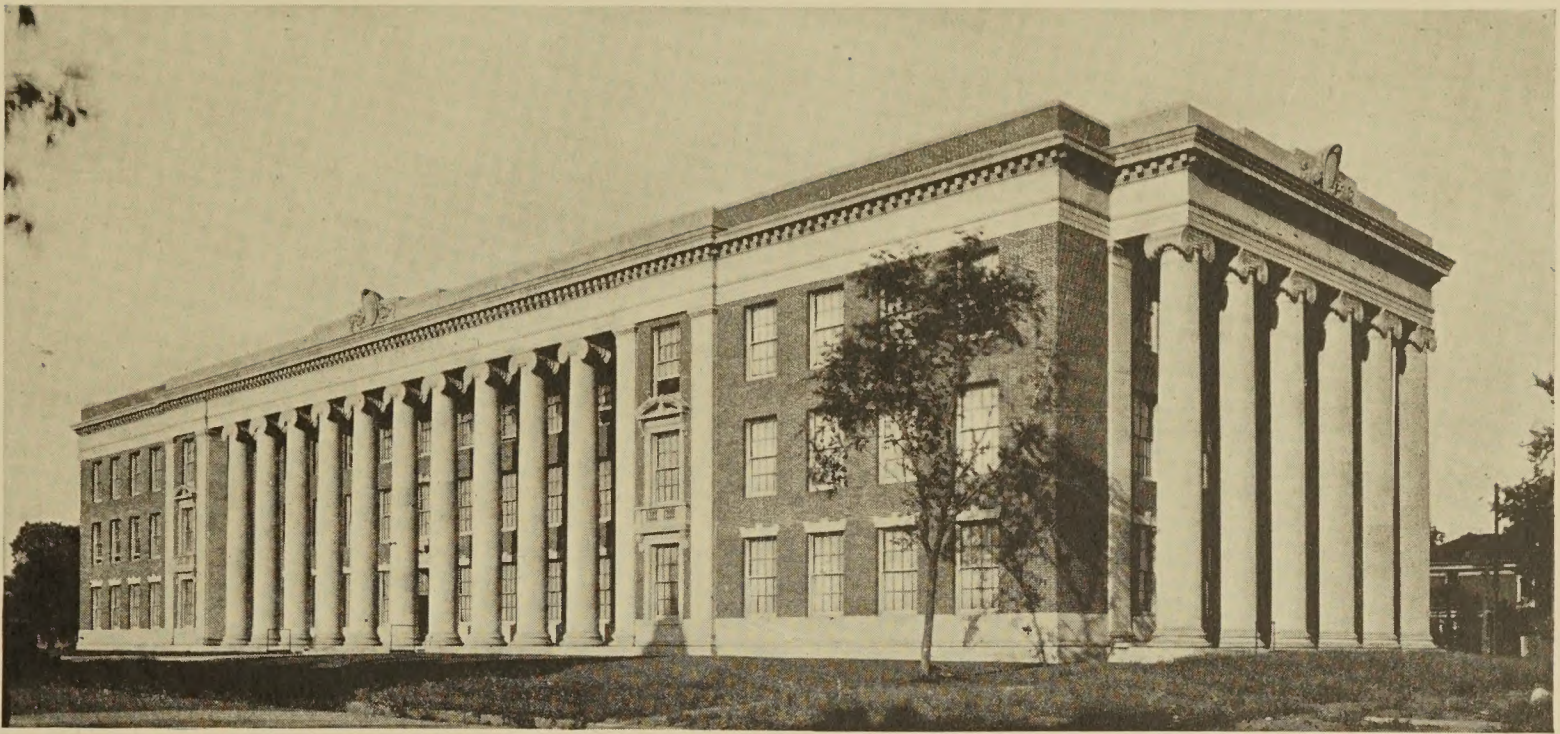
A WING of the RESIDENCE HALLS at CORNELL UNIVERSITY, Ithaca, N. Y.
DAY & KLAUDER, Architects

See page 20 for other views of this group

of classical style are illustrated, showing an interesting contrast between the two types of wall construction.

The upper building having brick walls with all of the architectural embellishments, including columns, entablature and cornice, and the door and window trim, lintels, etc., of INDIANA LIMESTONE. The lower building, which is an all INDIANA LIMESTONE structure, is an exceptionally fine example of classic style high school building.

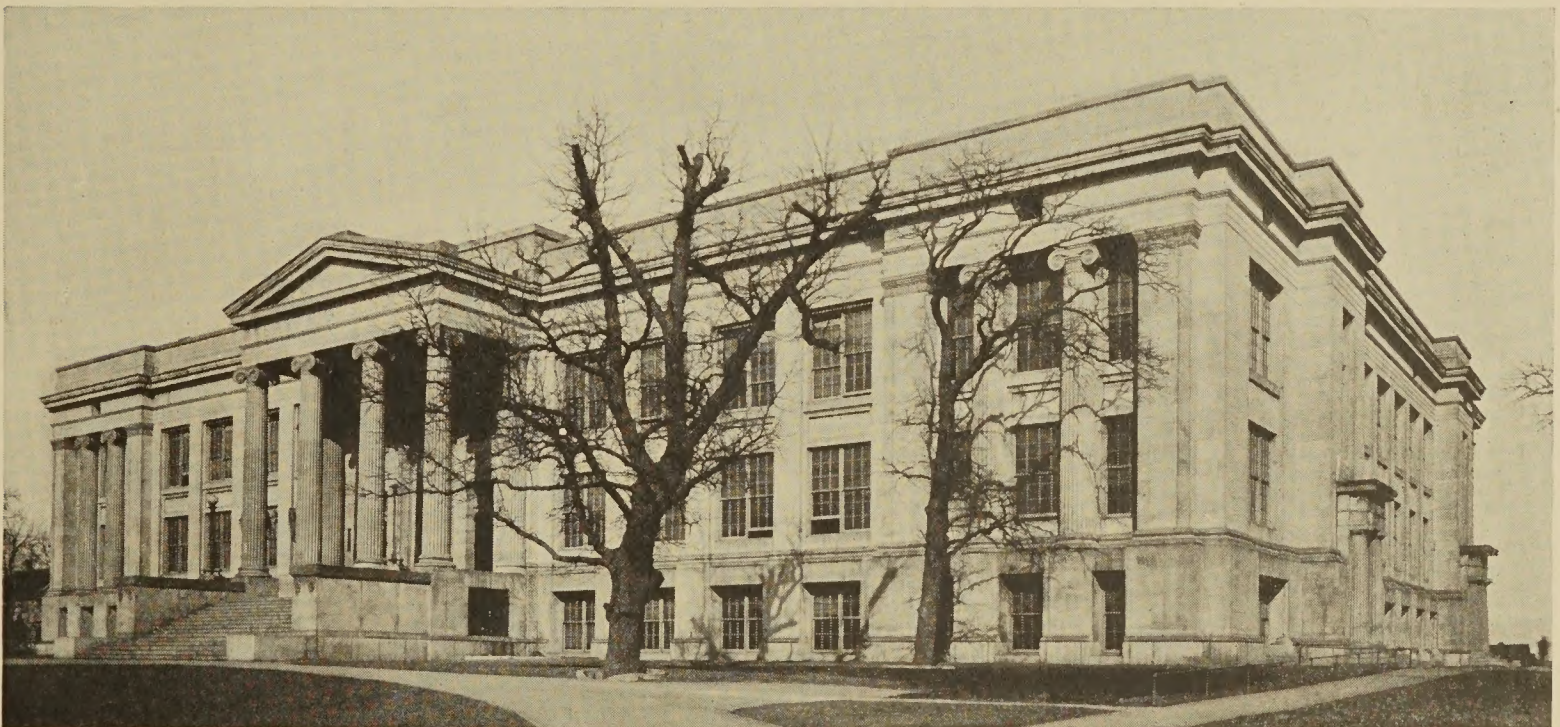
These two buildings also show an interesting contrast between a three-story colonnade without base and a two-story "order" set above a basement story.



SOCIAL SCIENCE BUILDING, UNIVERSITY OF NEBRASKA, Lincoln, Neb.

COOLIDGE & HODGDON, Architects

Brick walls with architectural members of INDIANA LIMESTONE



EAST HIGH SCHOOL, Des Moines, Iowa

Built of Buff INDIANA LIMESTONE

PROUDFOOT, BIRD & RAWSON, Architects

These specialists know from their experience, the true value and economy of the best materials but unfortunately, the shortage of school accommodations and the apparent need for lowest cost will sometimes influence school boards to require architects to specify cheap substitute materials that are always more or less unsatisfactory in the long run.

If there is any building that is permanent in the scheme of our social fabric, it is the school. Therefore, it is of the utmost importance that only truly permanent materials be used, material that will not only last but age gracefully and give to the building a hallowed appearance, a mellow age, free from shabbiness and the inevitable effects of time on



DETAIL VIEW of EADS HALL, WASHINGTON UNIVERSITY, St. Louis, Mo.

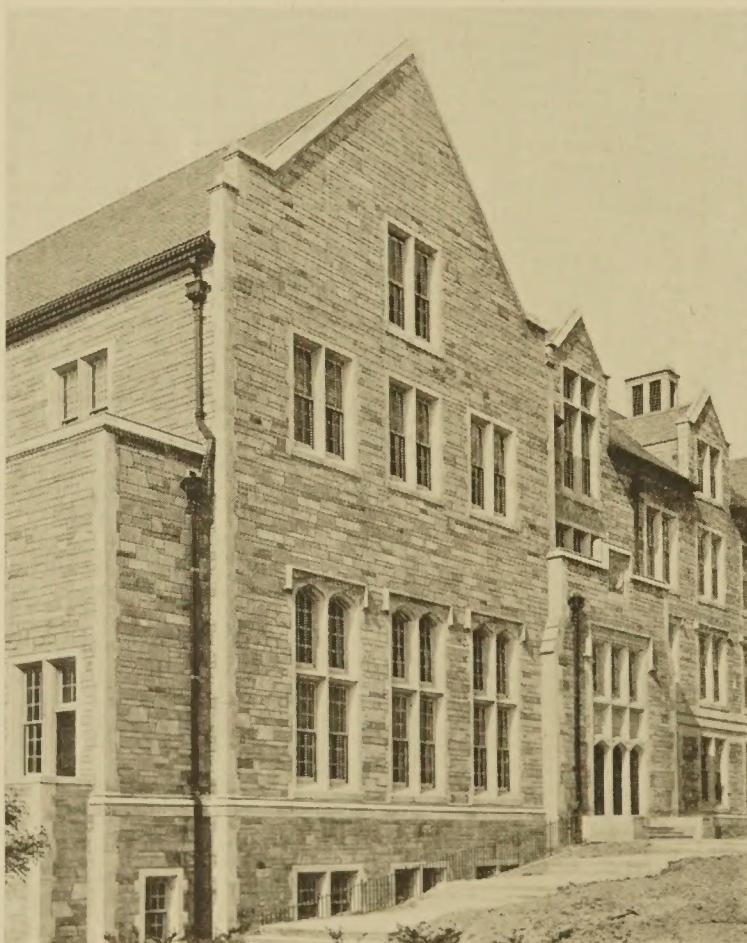
COPE & STEWARDSON, Architects

See views of other buildings at this University on pages 26 and 46

On this page, two interesting examples of the use of INDIANA LIMESTONE trim for buildings of Collegiate Gothic style are shown.

The upper building has walls built of rock-face Random Rubble of brownish pink granite with cut trim of Buff INDIANA LIMESTONE.

The lower building has walls faced with a Random Ashlar having irregular end joints, laid up of the rough-sawed "Quarry-run" Limestone, with the cut trim of Buff INDIANA LIMESTONE.



DETAIL VIEW of COMMERCE AND FINANCE BUILDING
INDIANA UNIVERSITY, Bloomington, Ind.
ROBERT FROST DAGGETT, Architect

Another view of the Commerce and Finance building is illustrated on page 12, showing this style of design in contrast to one of Colonial or Georgian classical style, having brick walls with the basement story, portico and all trim of INDIANA LIMESTONE. Other examples of the use of the rough-sawed finish "Quarry-run" INDIANA LIMESTONE Random Ashlar work are shown on pages 28 and 42, and by frontispiece on page 2.

the less permanent manufactured substitutes for natural stone facing or trim for walls of school and college buildings.

Unlike the commercial structure; the hotel, the bank, or apartment building; the school is seldom torn down and replaced by a more modern structure.

At best they are remodeled on the interior by the installation of better and more up-to-date sanitary and mechanical equipment. Many of the schools built forty and fifty years ago are still in use and many of the colleges built a hundred years and more are still doing good service. There is no objection to this, so long as the buildings are both well designed and properly built; the interiors appropriately renovated and the equipment replaced from time to time, in order that the sanitary, lighting and heating equipment be kept up to date with the development of these very necessary conveniences, that are essentially important features of all school buildings.

The exterior, however, cannot be changed to any extent and it should be as nearly right in the first place as it is possible to make it. Stone or an appropriate combination of stone and brick are unquestionably the best materials for this purpose.

The school with frame walls was only a makeshift and is no longer considered except in small rural locations, but even there a building with masonry walls is most desirable, both on account of the fire hazard, and on the score of ultimate economy. The cost of heating, painting, repair and other maintenance items will in a comparatively short period of years show a saving in favor of the more permanent masonry structure.

The desirability of using stone wherever possible for educational buildings, is attested by the preference given to this material over centuries of time, ever since learning became an established factor in the development of the human race. If, for no other reasons, the use of stone is desirable to give a certain scholastic character and dignity to school and college buildings.

From time immemorial the principal seats of learning have been associated with build-

ings of stone, as there is no other material so appropriate as this natural product, which forms the basic structure and foundation of the earth itself, standing for strength, solidity, permanence, honesty and structural integrity, all of which are attributes on which our educational system is based.



Entrance Bay SMITH HALLS QUADRANGLE
HARVARD UNIVERSITY, Cambridge, Mass.
SHEPLEY, RUTAN & COOLIDGE, Architects



MASSACHUSETTS COLLEGE OF PHARMACY, Boston, Mass.

KILHAM & HOPKINS, Architects

Brick walls with Buff INDIANA LIMESTONE trim



COMMERCE & FINANCE BUILDING, INDIANA UNIVERSITY, Bloomington, Ind.

ROBERT FROST DAGGETT, Architect

RANDOM ASHLAR field work of walls built of sawed QUARRY-RUN INDIANA LIMESTONE, with trim of the Buff Limestone

The two buildings illustrated on this page show in contrast two entirely different styles of architectural design, and types of construction; see descriptive notes on page 10.

When substitute products are employed, the element of commercialism is at once introduced into the outward appearance of the structure, with a consequent loss of dignity and character.

The all-stone school, originally the highest type, is still the most satisfactory type. The only one really satisfactory substitute is the brick school with sufficient stone trim to provide the medium in which a suitable expression of an appropriate exterior architectural design can be executed.

There is no material more suitable and economical for this purpose than INDIANA LIMESTONE, and at the same time this is the most readily available in all sections of the country. Often a local stone may be used to advantage for the field of the walls trimmed with the more easily worked INDIANA LIMESTONE, but in most instances an entire facing of INDIANA LIMESTONE will be found to be as low or lower in cost, on account of the machine methods that can be, and are, employed in the working and quarrying of this natural stone.

There is no other stone that is so easily and so economically worked, or in which the most elaborate or delicate detail can so readily be executed, and for that reason no other stone so satisfactory for architectural trim, as well as for the facing of walls built of brick, hollow tile, concrete, or any other form of masonry.

In INDIANA LIMESTONE the architect or school builder of today has available in unlimited quantity a better stone than was used by the Pharaohs of Egypt in the building of their Pyramids and Temples, a better stone than was used by King Solomon for his famous

Temple, and a better stone than, much of the stone employed by the Gothic builders in the building of the many beautiful Cathedrals of Europe; with the further advantage of low cost due to the most modern and economical, machine-production methods that are employed.

It is not necessary to put at work a great multitude of stone cutters, hewing out stones and shaping them for their position in the building at tremendous expenditure of ordinary hand labor. Skill has devised many methods of putting steam and electric power and compressed air to these tasks, leaving only the final work of the cutter and carver to be done by hand, generally with the aid of the modern air-hammer.

Today all of the sawing, turning, shaping,

moulding and other rough work is done by machine, including even the roughing out of carved detail for the cutters and carvers; which is done by various machine processes; leaving only the finished cutting and sculptured ornament to be executed by hand. Many of the so-called "hand finishes" on plain surfaces, are now executed entirely by machine.



DETAIL of FRONT ELEVATION, NORTH DALLAS HIGH SCHOOL, Dallas, Texas
WILLIAM B. ITTNER, Architect



HUNTER NORMAL COLLEGE, New York City

Built of Buff INDIANA LIMESTONE

C. B. J. SNYDER, Architect

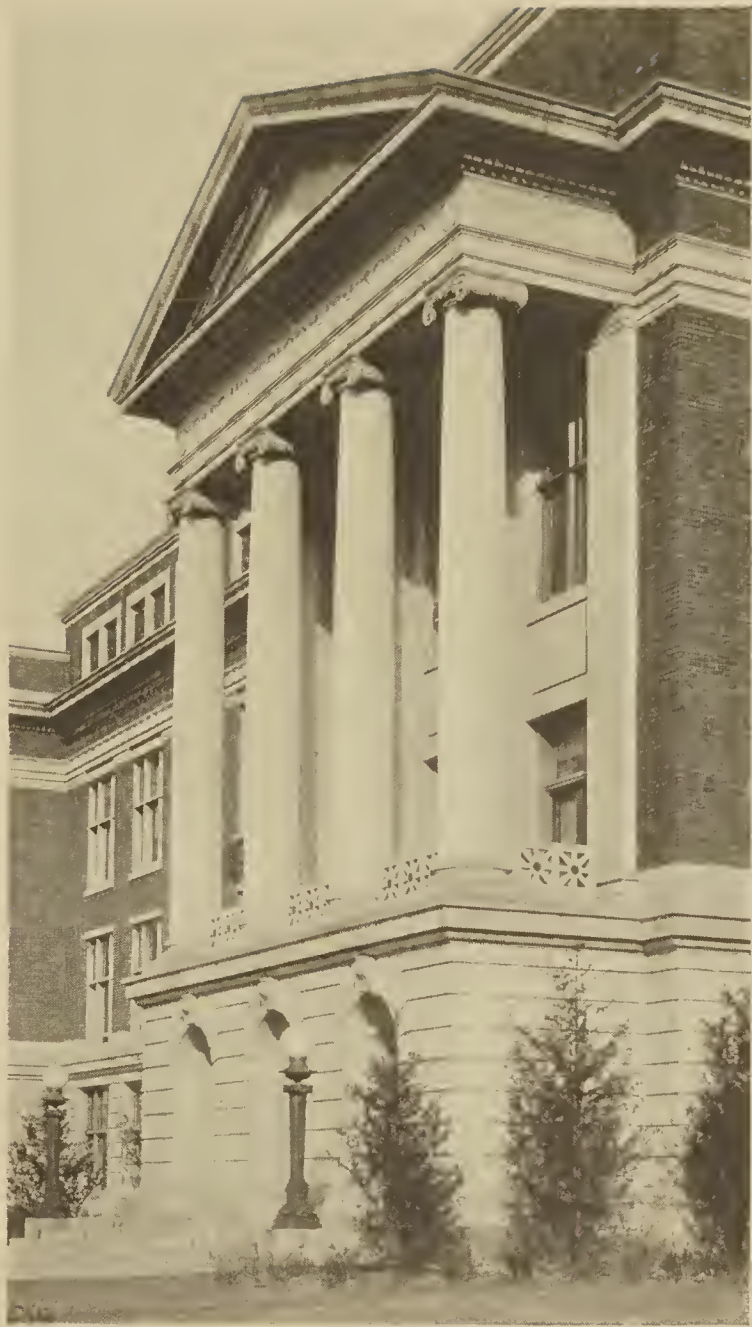
It has tritely been said that all useful things should be beautiful. When the exteriors of useful structures are executed in INDIANA LIMESTONE according to any design appropriate to the type and character and locality of the particular structure, they are always beautiful. The beautiful light color-tones and interesting texture of this fine natural product insure that result to all users of THE NATION'S BUILDING STONE, truly *The Aristocrat of Building Materials*.

The work of the stone cutter and carver has thus been lifted from the class of arduous toil, and the skilled mechanic in these trades made more of an artist-artisan who places the final and distinctive touch of hand work on the product; the touch that is so necessary to give to the stone that life and beauty of hand execution that can never be given to a product either executed and finished wholly by machine, or cast in a mould. There still remains in all of the best work of today that human touch of the artist that existed in the finest work of all time.

The masons of the Pharoahs of Egypt, the masons of Classic Greece



PORTICO, HAMILTON TECHNICAL INSTITUTE
Hamilton, Ontario, Canada
WITTON & WALSH, Architects



PORTICO, EAST WATERLOO HIGH SCHOOL
Waterloo, Iowa
M. B. CLEVELAND, Architect

and of Rome, the great Gothic and Renaissance builders, all left the imprint of their personality on the work of those times and so do the cutters and carvers of today, no matter how close the models of the architect-designer may be followed. Thus, living works that are worthy of the age and of the people, are continually being executed both to serve the needs of mankind and to delight the eye as well.

Many of the numerous fine INDIANA LIMESTONE school and college buildings illustrated, will exemplify this fact.



KENT CHEMICAL LABORATORY

SHEPLEY, RUTAN & COOLIDGE, Architects



RYERSON PHYSICAL LABORATORY

SHEPLEY, RUTAN & COOLIDGE, Architects

*Two of the fine group of INDIANA LIMESTONE Buildings at the University of Chicago
For views of other buildings in this group see pages 5, 22, 29, 39, 60 and 69*

It is an interesting coincidence that in accordance with the Biblical and Masonic traditions of the building of King Solomon's Temple, the stone was all cut and finished ready for setting at the quarries and was transported in the finished state to the building site, in this respect similar to the prevailing method employed at the present time in the INDIANA LIMESTONE industry for all types of buildings, including schools and colleges. The limestone is usually cut and finished, including all of the carving and sculptured work in its complete form, according to the architect's detail drawings, ready for erection at the building, either at the cut stone mills located in the quarry district, or at the cut stone plants which are located in nearly every large city.

With highly developed machine production at both points, there is no delay awaiting the cutting of stone, such as there was with the old slow hand-cutting method. The stone required for the largest operation can invariably be quarried, be cut and delivered at the building site before the excavation, foundation and other work preparatory to the erection of the superstructure, can be completed.

Any replacements needed through breakage can promptly be obtained, there is no delay in waiting for a new piece to be manufactured.

Beauty of form as well as of ornament can more readily be imparted to structures faced or trimmed with INDIANA LIMESTONE than when built of any other material. This is a satisfying beauty that one does not tire of, a beauty that is permanent because the structure built of this material ages so gracefully with the passing years.

The only effect of time is to enshrine the building with a hallowed aspect of mellowed beauty, free from the shabby appearance inevitably acquired by less enduring man-made substitutes.

Apart from its use for all-stone faced buildings and cut stone trim, there are certain grades of INDIANA LIMESTONE such as the VARIEGATED, the "Old Gothic", QUARRY-RUN and RUSTIC that can be used to advantage in the rough-sawn form for masonry work, as later described, especially for the masonry filling in of the field work of walls, that are trimmed with Cut Stone produced

from one of the regular grades of INDIANA LIMESTONE.

When the stone is used in that manner it is often possible to obtain a beautiful, dignified all-stone-faced structure at approximately the same cost as for one having the walls faced with brick and trimmed with Limestone. Examples of this form of construction are illustrated on pages 2, 6, 12 and 28. This method of use is further described on pages 33-35.



Central Bay of GORE HALL DORMITORY at HARVARD UNIVERSITY, Cambridge, Mass.
SHEPLEY, RUTAN & COOLIDGE, Architects



Detail View of CENTRAL PAVILION of this Handsome Group of INDIANA LIMESTONE Buildings



Aeroplane View of the MASSACHUSETTS INSTITUTE of TECHNOLOGY, Cambridge, Mass.

WELLES BOSWORTH, Architect



View of the WINGS ENCLOSING WEST COURT

WELLES BOSWORTH, Architect



CENTRAL COURT and ADMINISTRATION BUILDING

WELLES BOSWORTH, Architect

Two views of the Massachusetts Institute of Technology, Cambridge, Mass. One of the finest groups of INDIANA LIMESTONE College Buildings of classic Grecian design. Compare these with the Gothic design buildings forming the equally handsome group of entirely different character, at Chicago University, shown on pages 5, 22 and 69

THROUGHOUT all ages the great seats of learning have always been housed in monumental structures, usually either built of, or profusely trimmed with natural stone. (See Page 48)

This custom has prevailed in nearly all countries and to such an extent that

the very idea of higher learning has become associated with venerable old stone buildings, mellowed with time and hallowed alike by the personalities of the great men who taught there and the equally great scholars that were turned out as a result of their teaching.



BAKER TOWER and RESIDENCE HALLS, at CORNELL UNIVERSITY

DAY & KLAUDER, Architects



BOLDT HALL, CORNELL UNIVERSITY, Ithaca, N. Y.

DAY & KLAUDER, Architects

*A very handsome group of dormitories, having walls of shale with Buff INDIANA LIMESTONE trim
The somewhat similar style Princeton University building on opposite page has walls of local ledge stone with Limestone trim*



WESLEY FOUNDATION BUILDING, UNIVERSITY OF ILLINOIS, Urbana, Ill.
Built entirely of INDIANA LIMESTONE

HOLABIRD & ROCHE, Architects



PYNE HALL, PRINCETON UNIVERSITY, Princeton, N. J.

Built of local ledge stone with INDIANA LIMESTONE trim, see detail view page 50

DAY & KLAUDER, Architects

Stone was used wherever possible because in the execution it permitted the use of a style, at once heroic and romantic, dignified and venerable, more rich and imposing and without the domestic quality of brick. Every effort was made to give these educational structures a character that would express the im-

portance of their function and serve as a lasting inspiration to the student body. No one can help but admire these magnificent buildings, magnificent not always in point of size or scale, but in the romantic and picturesque irregularity of carefully studied detail, honest craftsmanship and lasting construction.



HUTCHINSON HALL and MITCHELL TOWER at UNIVERSITY OF CHICAGO SHEPLEY, RUTAN & COOLIDGE, Architects



HARPER MEMORIAL LIBRARY, UNIVERSITY OF CHICAGO, Chicago, Ill. COOLIDGE & HODGDON, Architects

Two beautiful examples of Gothic design in the fine group of INDIANA LIMESTONE Buildings at that University. Other buildings are shown on pages 5, 16, 39, 60 and 69



LIBRARY BUILDING, COLUMBIA COLLEGE, New York City

McKIM, MEAD & WHITE, Architects

Considered by some the masterwork of this great firm of designers



LANDELL HALL, LAW SCHOOL at HARVARD UNIVERSITY, Cambridge, Mass.

COOLIDGE & SHATTUCK, Architects

The buildings illustrated on this and opposite pages show in contrast fine examples of Gothic and Classical Style College buildings, built entirely of INDIANA LIMESTONE

They serve today as the inspiration for some of the best work of our most able architects who specialize in school and college work and quite rightly so, as they constitute worth while examples of good style and a worthy tradition on which to base the design of the modern school or college building.

In America, where the latest development of the modern free state and municipal educational systems have taken place, there is also to be found a most interesting development from its earliest humble beginning to the more permanent and beautiful school buildings of the present time.



W. H. BALLARD SCHOOL, Hamilton, Ontario, Canada

Built of Red Brick with Buff INDIANA LIMESTONE trim

WARREN & McDONNELL, Architects



ABINGTON HIGH SCHOOL, Philadelphia, Pa.

Built of local ledge stone with INDIANA LIMESTONE trim

HEACOCK & HOKINSON, Architects



SCHENLEY HIGH SCHOOL, Pittsburgh, Pa.

An example of INDIANA LIMESTONE School, with smooth-rubbed finish

EDWARD STOTZ, Architect



FARRAGUT SCHOOL, Joliet, Ill.

J. D. CHUBB, Architect

The American colonist finding timber plentiful and to be had for the clearing of the land, built largely of frame construction, but as the cities were established, masonry construction was used for schools wherever it was feasible, both on account of the importance given to these buildings and on account of the

fire hazard. Still these buildings had to be low in cost, the country was not wealthy then and there was not enough money to build more lavishly, and in consequence, the little red brick school became a familiar object in the cities and even on the more or less rural landscape.



GYMNASIUM, INDIANA UNIVERSITY, Bloomington, Ind.

ROBERT FROST DAGGETT, Architect

Wall of rock face INDIANA LIMESTONE with smooth finish trim



NORTH BUILDING, WASHINGTON UNIVERSITY, St. Louis, Mo.

COPE & STEWARDSON, Architects

Rock-face Granite Walls with INDIANA LIMESTONE trim; see description on page 10



PHYSICS BUILDING, UNIVERSITY OF IOWA, Iowa City, Iowa

PROUDFOOT, BIRD & RAWSON, Architects

One of the fine all INDIANA LIMESTONE buildings at Iowa State College; See other buildings illustrated on pages 27, 31, 38 and 75



LIBRARY BUILDING, BOWDOIN COLLEGE, Brunswick, Maine

HENRY VAUGHAN, Architect

Gothic style College Library with Brick and INDIANA LIMESTONE walls



SCHOOL OF ENGINEERING BUILDING, IOWA STATE COLLEGE, Ames, Iowa

PROUDFOOT, BIRD & RAWSON, Architects

Built entirely of INDIANA LIMESTONE

Here and there where local stone was available, it was used as masonry in a simple manner with little or no elaboration in the way of cut stone. In fact the cornices, entrance features and other trim of both brick and stone schools of that early period were generally of wood.

With the rapid growth of the new country, more and still more schools were necessary. There was never any money for really fine structures and in consequence the plain factory-like school of brick came into being and still remains in use in a great many localities.



MAIN BUILDING, EVANSVILLE COLLEGE, Evansville, Ind.

MILLER, FULLENWIDER & DOWLING, Architects

An example of the rough-sawed QUARRY-RUN INDIANA LIMESTONE laid up as a RANDOM ASHLAR with irregular broken end joints



LANGLEY HIGH SCHOOL, Pittsburgh, Pa.

McCLURE & SPAHR, Architects

*Walls of rock face sandstone with Rustic INDIANA LIMESTONE trim
These two buildings show an interesting comparison of rough-sawed Limestone RANDOM ASHLAR and sandstone Rubble Work*



SCHOOL OF EDUCATION BUILDING, UNIVERSITY OF CHICAGO, Chicago, Ill. SHEPLEY, RUTAN & COOLIDGE, Architects

Happily with the continued prosperity and the accumulation of wealth more attention was paid to the cultural side of our countries development. A greater interest in art and the artistic developments in all lines of activity soon developed, and along with this, more attention was paid to the appropriate design of school buildings. Today most of the ordinary grade schools are designed with the idea of some distinctive and appropriate architectural expression:-Colonial, Collegiate Gothic, Classic, Western, or whatever it may be, this calls for the use of a medium in which the architectural elements and ornamental detail can be executed. For that purpose there is no material more

suitable, more lasting and durable or more economical in the long run than INDIANA LIMESTONE. Hence, the very extensive use of this material for the trim of brick walls, of all better class school buildings, as shown by the numerous fine examples of brick trimmed grade, high school and college buildings that are illustrated in this volume.

This combination is a most pleasing one as the color-tones of this stone blend well with light colored buff or grey brick, just as they give a most delightful

contrast to the ordinary red brick, or to the brown or reddish brown and other darker colored brick, that are so frequently used for the walls of school and college buildings.



GRADE SCHOOL at Baldwin, N. Y.
TOOKER & MARSH, Architects

The two buildings illustrated on this page, show the two extremes of the wide range of use for INDIANA LIMESTONE in school and college buildings; the upper view a handsome all-stone, college building and the lower view a small semi-rural brick school made attractive with INDIANA LIMESTONE trim.



ELIZA FOWLER ASSEMBLY HALL, PURDUE UNIVERSITY, La Fayette, Ind.

VONNEGOT & BOHN, Architects

INDIANA LIMESTONE in combination with Brick and Terra Cotta



PATTON GYMNASIUM, NORTHWESTERN UNIVERSITY, Evanston, Ill.

GEORGE W. MAHER, Architect

An example of the adaptability of INDIANA LIMESTONE in the execution of a somewhat unusual, so-called Western type of design

The designer or sculptor is not hampered with a restricted medium when INDIANA LIMESTONE is used. There is no other material in which all types of Architectural treatment and all classes of sculptured detail and ornament can so readily be executed with most satisfying results. INDIANA LIMESTONE enables the designer or sculptor to put whatever class of feeling into the work, that he may desire.

THE NATION'S BUILDING STONE



McKINLEY HIGH SCHOOL, Chicago, Ill.

Buff Brick with INDIANA Limestone trim

MUNDIE & JENSEN, Architects



ADMINISTRATION BUILDING, IOWA STATE COLLEGE, Ames, Iowa

PROUDFOOT, BIRD & RAWSON, Architects

The best European traditions have been more closely followed in American college buildings, than in schools. Some of the earlier colleges were built of brick, but stone has been extensively employed in most of later colleges, at least for trim, if not for the entire facing of the walls. Numerous examples of both all INDIANA Limestone college buildings and of the many buildings trimmed with this

stone are illustrated in this volume. The fine all-stone group of the Chicago University is one of the most notable and consistent examples, illustrated on pages 5, 16, 22, 39, 60 and 69.

Yale, Princeton, Cornell and Iowa are other good examples, showing both all INDIANA Limestone buildings and the use of this material as trim for walls built of local ledge stone.

See Historic Notes on educational development, page 48



OMAHA HIGH SCHOOL, Omaha, Neb.

JOHN LATENSER & SONS, Architects

Built entirely of INDIANA LIMESTONE



CHEMISTRY BUILDING, CORNELL UNIVERSITY, Ithaca, N. Y.

GIBB & WALTZ—DAY & KLAUDER, Associate Architects

Walls built of local shale with Variegated INDIANA LIMESTONE trim



EAST HIGH SCHOOL, Columbus, Ohio

HOWELL & THOMAS, Architects

Fine example of modern school built entirely of INDIANA LIMESTONE

The higher type of all-stone school patterned more after the college building, is coming into more general use, especially for high schools and other important schools that form a part of a civic center or monumental city plan.



MAIN BUILDING, UNIVERSITY OF TENNESSEE, Knoxville, Tenn.

MILLER, FULLENWIDER & DOWLING, Architects

*Compare this stone trimmed brick building and tower with the all-stone Random Ashlar building at Evansville College shown on page 28 and frontispiece page 2
Both buildings are of somewhat similar design, by the same Architects*



HIGHLAND PARK HIGH SCHOOL, Highland Park, (Detroit) Mich.

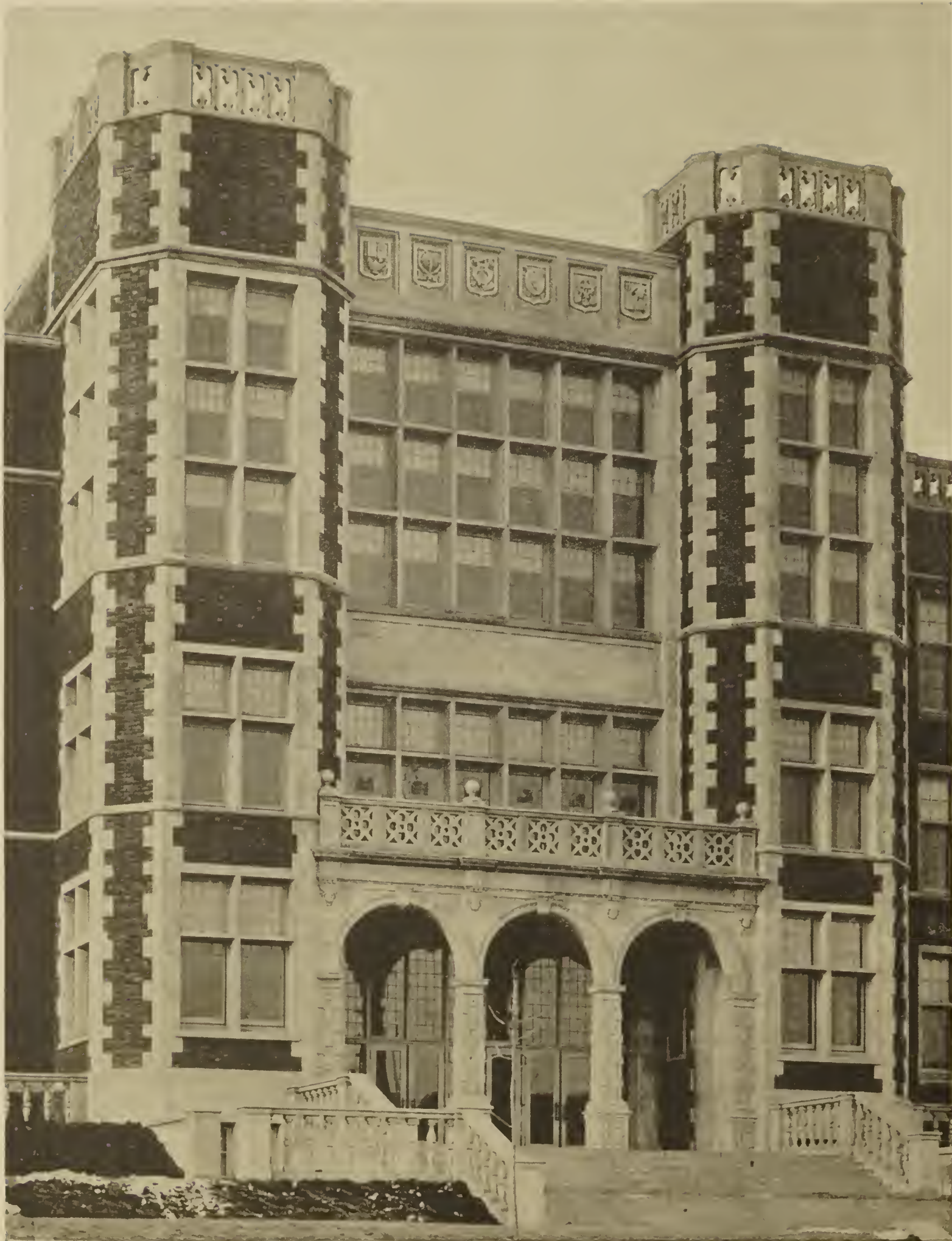
W. D. BUTTERFIELD, Architect

The two buildings on this page show an interesting comparison between the use of local stone and brick for field work of walls, in combination with INDIANA LIMESTONE trim

A VERY RECENT development in the use of INDIANA LIMESTONE which gives to the school or college builder a wider choice in the selection of stone and in the general character of the exterior treatment as well, is the rough-sawed "Old Gothic," "Variegated," "Rustic" and "Quarry-run," grades of this stone, which are now available in sawed strip form for use by Masons.

These grades employed as a Random Ashlar facing, or in some other infor-

mal, or irregular coursed ashlar jointing scheme, for the field work of walls, combined with the Cut Stone trim of one of the regular grades of INDIANA LIMESTONE, make possible many delightfully appropriate masonry effects, that are neater and more clean-cut than any ordinary form of rubble or rock-faced. Random Ashlar of local field or ledge stone. At the same time these forms of wall construction are not so formal in effect as the regular coursed Cut Stone ashlar.



DETAIL VIEW of CENTRAL HIGH SCHOOL, Minneapolis, Minn.

W. B. ITTNER, Architect

View of Central Bay of the High School illustrated on page 62, showing more clearly the INDIANA LIMESTONE Quoins, window trim, parapet, entrance arcade and balustrades



Entrance Bay NORTH DALLAS HIGH SCHOOL, Dallas, Texas

W. B. ITTNER, Architect

*Showing the finely carved INDIANA LIMESTONE trim of Central Bay and Main Entrance feature of this building
Note the pleasing contrast of the light colored Limestone and the Brickwork, laid in Flemish-bond with a light color mortar*

This rough-sawed-four-side material also places the all-stone faced school within the range of moderate cost school buildings. Using the rough-sawed "Old Gothic" INDIANA LIMESTONE as a Random Ashlar or as Range work, the all-stone school may now be built at almost the same cost as the brick faced school with trim of stone or terra cotta.

This gives the Architect and School Board a wider range of choice in selecting the exterior treatment, especially for grade and intermediate schools, where formerly the all-stone building was not always considered economically advisable, regardless of how desirable it might otherwise be, on account of its location and the condition of its site.



EAST WATERLOO HIGH SCHOOL, Waterloo, Iowa

M. B. CLEVELAND, Architect



BLOOMINGTON HIGH SCHOOL, Bloomington, Ill.

A. L. PILLSBURY, Architect

Two distinctly different interesting examples of INDIANA LIMESTONE trim

The fine array of school and college buildings illustrated in which INDIANA LIMESTONE has been employed, should, we feel, be convincing proof of the fact that this stone is the very best and most appropriate material to use at least for the trim of educational buildings of all types, and for the entire facing of the walls wherever the design, location and condition of site make it desirable, and whenever the funds permit it to be employed to that extent. In either way it is always real economy to use INDIANA LIMESTONE regardless of any moderate increase in the cost.

The Aristocrat of Building Materials



HIGH SCHOOL, Waterloo, Iowa

W. B. ITTNER, Architect



RIVERSIDE HIGH SCHOOL, Milwaukee, Wis.

VAN RYN & DE GELLEKE, Architects

Examples of this informal class of work, using the rough-sawed "Variegated" "Old Gothic" or "Quarry-run," grades of stone for the wall facing, are shown by the buildings illustrated on pages 2, 6, 12 and 28. The examples of Random Ashlar facing shown on pages 42 and 69, while not built from these grades,

are similar in treatment and general effect, excepting that in these buildings the facing being produced as Cut Stone, is somewhat more accurately jointed.

With Cut Stone, the mortar joint is usually only $\frac{1}{4}$ " wide, whereas with the rough-sawed stone masonry a joint $\frac{1}{2}$ " or more in width is the usual practice.



LIBERAL ARTS BUILDING, UNIVERSITY OF IOWA, Iowa City, Iowa

PROUDFOOT, BIRD & RAWSON, Architects

One of a fine group of INDIANA LIMESTONE buildings at this University



SCHOOL OF AGRICULTURE BUILDING, IOWA STATE COLLEGE, Ames, Iowa

PROUDFOOT, BIRD & RAWSON, Architects

One of the equally fine group of INDIANA LIMESTONE buildings at this College



NATURAL SCIENCE BUILDING, UNIVERSITY OF IOWA, Iowa City, Iowa

PROUDFOOT, BIRD & RAWSON, Architects

Other INDIANA LIMESTONE buildings at these two Iowa Colleges are illustrated on pages 26, 27, 31 and 75



GEOLOGICAL BUILDING, UNIVERSITY OF CHICAGO, Chicago, Ill.

HOLABIRD & ROCHE, Architects

Showing an interesting variation in design from other buildings in this fine Gothic group

Quite a few substitutes for *natural stone* have been and are constantly being marketed. This is only natural on account of the extensive demand for this material. None of these substitutes, however, can compete in the way of appearance after the newness has worn off, none of them will age so gracefully and beautifully as INDIANA LIMESTONE, or present such a rich and handsome appearance. None of them are so lasting and durable, or possess equal structural merit.

The only possible argument that can be advanced for their use, is that in point of first cost, they are cheaper. However, even that does not always apply and in the long run, they are more expensive and very much less satisfactory both in appearance and weathering

qualities. Where the work is detailed with reasonable simplicity, INDIANA LIMESTONE on account of the machine production methods that are employed, will cost very little more than any substitute for it that could be used.

Cheapness in first cost is a fallacy and should never enter into the consideration of an exterior material for such important structures as school and college buildings.

To say that the school must be sanitary and fireproof and well lighted is not enough, it should have character and be beautiful as well. The school should serve as an inspiration to all builders in the community, which is ever an appeal for better and more rational school building designs, better material and more lasting construction.



COLLEGE OF THE IMMACULATE CONCEPTION, Brooklyn, New York

G. E. STEINBACK, Architect

The illustrations of the four Catholic Colleges on this page and on pages 41, 42 and 43 show four distinctly different types of construction.

The college on this page is of French transitional Gothic style, built of brick, heavily trimmed with INDIANA LIMESTONE.

The College on opposite page 41, is an all INDIANA LIMESTONE building of a beautifully delicate and chaste English adaption of a Continental Scholastic Gothic type.



Entrance Detail CRESTON JUNIOR HIGH SCHOOL
Grand Rapids, Mich.

H. H. TURNER, Architect

The College on page 42 shows an adaption of the more rugged and earlier type of Continental Gothic, having plain walls, built of a sawed finish INDIANA LIMESTONE laid in a style of Random Range work.

In contrast to this college, the school on page 43 shows a richly carved all INDIANA LIMESTONE building of the decorated French Gothic style.

Each of these buildings are a good example of the particular style of design.



UNIVERSITY OF DETROIT (Catholic), Detroit, Mich.

OSCAR C. GOTTESLEBEN, Architect

See description on opposite page

INDIANA LIMESTONE as a building material embodies all of those structural characteristics that make it the most desirable material to use for the architectural features of schools, whether they are of Collegiate Gothic, either simple or elaborated Classic, or of quite Modern non-stylistic design.

The use of a beautiful light colored *natural stone* like INDIANA LIMESTONE is always an assurance of permanent good appearance and is an economy in the long run, even where its use involves an appreciable increase in the first cost over manufactured substitutes for stone.

This happily, however, is not the case, as in most localities and in most instances, with the average run of school

building design, this fine *natural stone* can be obtained almost as low in cost as several of its substitutes.

The School Director, Superintendent or Building Committeeman cannot overlook the fact that he is a custodian of the public funds and must spend them wisely. Building cheaply to fit within an inadequate appropriation seldom brings credit either to the committee or the community. Where the appropriation is obviously inadequate for a substantially built structure of good material, it is best to build properly as much of the building as possible within the limits of the appropriation, and defer building the remaining part until additional funds are available.



ROSARY COLLEGE, River Forest, Ill.

C. W. KALLAL, Architect
RALPH ADAMS CRAM, Associate

An interesting example of range work with sawed finish. See notes on page 40

THE DETAILING OF CUT STONE, ASSOCIATION SERVICE

The detailing of cut stone is a highly technical matter and most architects are glad to avail themselves of the service which this Association is prepared to render, where a restudy of the design is necessary, in order to reduce the cost of the structure to fit within an appropriation.

If any further information on any subject pertaining to INDIANA LIMESTONE and its use for school or college buildings is desired, or if any apparent difficulty should arise in con-

nection with the use or proposed use of this material, a communication addressed to the Service Bureau of this Association will be appreciated.

If we can be of any assistance to Architects or School Boards, in the answering of any technical or other questions, helping you solve any structural or other building problems which may arise, or by supplying further copies of any other literature, please consider that we are at your command.

INDIANA LIMESTONE QUARRYMEN'S ASSOCIATION
Service Bureau, P. O. Box 500, BEDFORD, INDIANA



ST. EDMONDS SCHOOL, Chicago, Ill.

Built of Variegated INDIANA LIMESTONE

H. J. SCHLACKS, Architect

Reducing the cost by eliminating appropriate stone trim; or by substituting less permanent and satisfactory material therefor, in order to make some little reduction in the aggregate cost of the structure, generally gives an unsatisfactory result and in time an appearance which the committeeman or the official in charge, will not be proud a few years later to acknowledge he was partly responsible for. There is, however, one way that the cost of school buildings can often be legitimately reduced, which is by cutting out any unnecessary ornament

or over-abundance of ornamental detail and by detailing all the architectural trim in a manner that will facilitate economical machine production.

Frequently substantial savings can be effected in this manner without any serious modification of the Architect's design, or detriment to the appearance of the finished building.

This Association now maintains a Service Bureau to advise with School Boards and their Architects on matters of that kind, the services of which are rendered free of charge.



SCHOOL OF JOURNALISM, COLUMBIA UNIVERSITY, New York City

McKIM, MEAD & WHITE, Architects

The two buildings illustrated on this and opposite pages are representative examples of the fine group at this University that are built of brick with INDIANA LIMESTONE trim above a basement story of granite

INDIANA LIMESTONE or BEDFORD STONE

IN ANSWER to the quite natural query of anyone not familiar with this material, "What does the term INDIANA LIMESTONE designate?", it may be briefly stated that this refers to the handsome light colored building stone that is so extensively used in all parts of the United States and Canada, for schools and colleges and for all sorts of monumental buildings, including banks, churches, libraries, post offices, and government buildings, etc.

By reason of its use in so many of the finest structures during the past sixty years, INDIANA LIMESTONE, or BEDFORD STONE, as it was formerly called, has become universally famous as a building material throughout the entire country. It is now recognized as the most important of natural building materials and on account of its wide range of usage in all kinds of structures, from houses to the finest monumental buildings, it is justly termed

"THE NATION'S BUILDING STONE."

INDIANA LIMESTONE is a *natural stone*, not a manufactured product. It is a fine, even textured OOLITIC, or non-crystalline massive limestone of beautiful soft color-tone, ranging in the various grades from a somewhat grayish buff, on through silver gray to a medium toned gray of slightly bluish cast.

The massive deposit forming the ledges in the hills of Southern Indiana, from which this fine, easily worked, yet durable and permanent stone is quarried, constitutes one of the most wonderful and probably the most useful of building stone deposits in the world.

An interesting booklet, Volume I of the INDIANA LIMESTONE LIBRARY, which fully describes the stone, its characteristics, formation, color-tone, texture and structural qualities, will be sent free upon receipt of postal request.



KENT HALL, COLUMBIA UNIVERSITY, New York City

McKIM, MEAD & WHITE, Architects

THE INDUSTRY'S EQUIPMENT AND FACILITIES

INDIANA LIMESTONE is in no sense a local product but has a country-wide distribution, and constitutes about 35% of all the building stone used throughout the United States. Stocks of it are carried by Cut Stone trade in all large cities and in many of the smaller towns.

The organization and equipment of this industry has been continually improved during recent years, and is now on a remarkably high plane.

New and improved labor saving machinery is constantly being installed and the facilities for prompt and efficient service and low cost production are unequalled by any other quarry industry in America or abroad.

A regular shipment of over 100 car-loads per day can readily be handled during the building season, and the stone for any number of large operations can usually be quarried, milled and shipped before the other preliminary work, foundations, etc., can be built ready for the walls of superstructure.

Very ample stocks of both regular and special grades are maintained at the quarries. The industry is noted for the prompt handling of large contracts, and the school builder in placing a contract for INDIANA LIMESTONE with any capable Cut Stone Contractor, may rest assured that the erection of stone work will be as free from delay as it is possible to have it.

INDIANA LIMESTONE QUARRYMEN'S ASSOCIATION

BEDFORD, INDIANA



EAST SIDE HIGH SCHOOL, Cincinnati, Ohio

GARBER & WOODWARD, Architects



RIDGLEY LIBRARY, WASHINGTON UNIVERSITY, St. Louis, Mo.

COPE & STEWARDSON, Architects

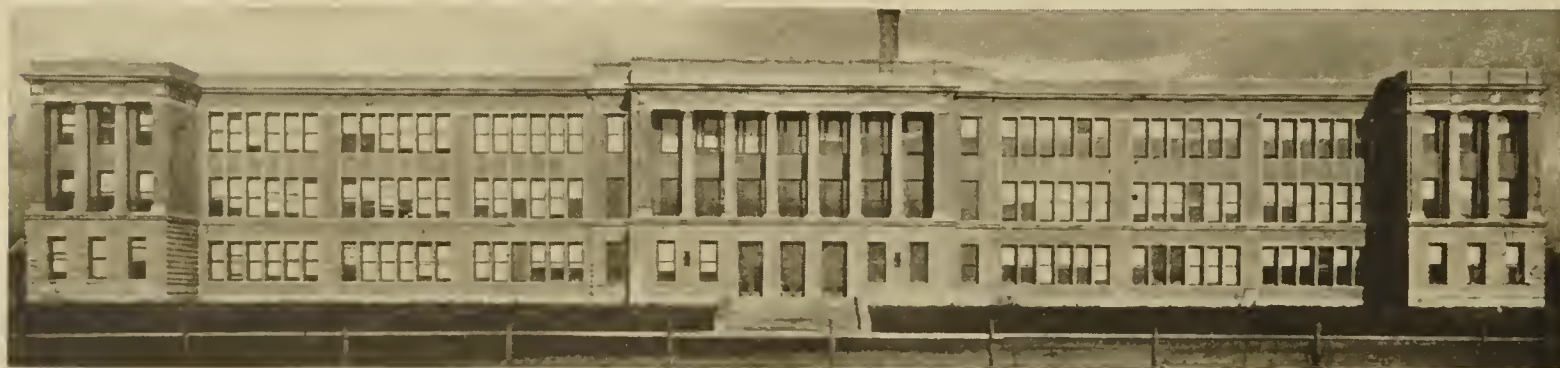
Granite walls with INDIANA LIMESTONE trim. Other buildings of this group are illustrated on pages 10 and 26



UNIVERSITY OF TENNESSEE, Knoxville, Tenn.

MILLER, FULLENWIDER & DOWLING, Architects

The main building of this group is illustrated on page 33



MADISON JUNIOR HIGH SCHOOL, Rochester, N. Y.

GORDON & KAELEBER, Architects



WOMAN'S INSTITUTE BUILDING, INTERNATIONAL CORRESPONDENCE SCHOOLS, Scranton, Pa.
W. F. LOWNDES, Architect



CROSSETT AVENUE SCHOOL, La Grange, Ill.
Two examples of Limestone trim, showing different triple-window treatments
CHILDS & SMITH, Architects

THE DEVELOPMENT of SCHOOLS and COLLEGES from ANCIENT TIMES

A brief historical outline of the progress of education, with notes on the schools of the Ancients and those of Classical, Medieval and Renaissance times from which the Modern Schools, Colleges and Universities were developed.

COMMENCING with the earliest historic records in Egypt, the Archæologists find that such schools of learning that existed were associated with the priesthood and were therefore housed either in the monumental stone Temples or in the equally monumental Palaces of the ruling dynasty.

It is interesting to note that the Egyptians with their keen knowledge of the relative values of building material were extensive users of Limestone. Many of the fine temples, which without doubt housed the scholars of ancient Egypt, were built of Limestone, just as their Tombs, their Pyramids and other important structures were built largely of this readily worked and most satisfactory material.

Stone was not available to the Assyrians and Babylonians, who therefore built largely of brick, but with the advance of eastern civilization into Syria, Phoenicia and the Biblical Countries, and later at Carthage, the use of Limestone for Temples and Palaces forming the seats of higher learning in these countries the same as in Egypt, is also found.

Thus, in all the earliest historic records of the very beginning of our modern educational system, we find the magnificent and often stupendous stone Temples, as the first schools or colleges.

Taking the next step from the ancient civilizations of Egypt and the Syrian countries, to Greece, we again find that when the schools of Classic Greece were established, they, too, were housed in monumental buildings of stone, in this case mostly marble; which is a metamorphosed Limestone; simply because marble deposits happened to be more prevalent in that country.

Here we find the great Philosophers and Scholars of Greece teaching their classes within the wonderfully beautiful classic structures at Athens and elsewhere in the cities of that highly cultured and glorious civilization.

With the ancient Greeks, the supremacy of the state was generally unquestioned. With them the highest life was one of cultured leisure in which one's energies were mainly concentrated upon the pursuit of knowledge for its own sake, rather than to apply it to any useful purpose.

The Greek schools, however, do not date from the great Hellenic age, but from the later Macedonian or Hellenistic Period. There were no schools at first, but there were three kinds of Professional teachers who taught the more fortunate of the youth of ancient

Greece—reading, writing, arithmetic, music, literature and athletic sports.

A secondary or higher education was developed during the latter half of the 5th century B. C. when the first schools at fixed places were established by the Philosophers, who conducted schools, or rather taught classes at the various public gymnasiums.

Plato at the Academy and Aristotle at the Lyceum, gave three or four year courses. Plato's school became the first college and growing out of this the University of Athens, a Philosophical school, was established, which became the center of higher culture. Following this the University of Alexandria was founded, as a religious as well as Philosophical school, and when the intellectual hegemony of Greece for a time passed from Athens to Alexandria, this was the great center of higher learning and culture. The founding of colleges at Syracuse and Corinth followed those at Athens and Alexandria.

Early Roman education was given entirely in family and public life, there were no schools, the youth being taught by their parents.

In ancient Rome, schools began as a result of their intercourse with the Greeks, the first school being established at Rome about 230 B. C. Other early Roman schools were the state schools established a little later, during the Empire, at Carthage, Milan and Constantinople and still later at Treviso.

In classic Rome we also find the development of these seats of learning associated with the finest monumental structures of stone, and in that city we find the first real school building devoted entirely to collegiate purposes.

These ancient Roman schools were very like the modern ones, just as our laws in so many of their provisions, are based upon the laws of the Emperor Justinian.



Entrance Detail at KIRKWOOD HIGH SCHOOL,
Kirkwood, Mo. WM. B. ITTNER, Architect

NOTE: Geologically, the Limestone of Egypt, is a much later formation, less strong, less pure and very much inferior as a building material to the massive and remarkably fine deposit in Southern Indiana, which was formerly called BEDFORD STONE but now universally known as INDIANA LIMESTONE, an abbreviation of its geological designation, as Indiana (Oolitic) Limestone.

Across the Alps in Europe, or in Gaul as it was then called, colleges patterned on the early Roman schools were founded during the succeeding century at Poitou, Narbonne, Toulouse and Tours, in what is now France, and at Lerida in Spain.

Thus during the centuries that followed, customarily referred to as the Byzantine period of Roman culture, and the spreading of that culture to the westward and to the north into Gaul, accompanying the military expansion of the Roman empire, we again find the seats of learning housed in structures built largely of stone, wherever that material was available. Limestone in one of its various forms was the generally preferred material wherever available, on account of its known permanence, its easy working and structural qualities.

Monasticism was founded in Egypt by the Copts at the beginning of the 4th century and rapidly spread into and through the civilized parts of Europe. During the latter part of this period the monastic system of education was established and developed.

The first English school was established at Canterbury at the end of the 6th Century and schools at York and Winchester then followed.

The public schools that were established in the several civilized countries during the early A. D. centuries, disappeared during the following centuries, due to the Barbarian inroads and subjugation of the western races.

With the disappearance of the schools established under the Roman domination, the seats of learning passed entirely to the Monasteries, which had by this time become well established and all during the dark early middle ages which followed, the light of knowledge was kept burning in the Monasteries and Convents.

Along with the complete control of education by the Monasteries there was naturally a further extension of these religious cults or Orders all over the countries of Europe, and the building of numerous convents and monasteries. Again stone, frequently limestone very much like the limestone that we now use for building purposes in America, constituted the preferred, if not the principal building material, both for the monastic school, convent or other educational structure and for the churches and cathedrals.

In central Europe the first revival of intellectual activity after a lapse of about 250 years, was along toward the close of the 8th century, during Charlemanges' time, when the Palace School and the Bishops' and Monastic schools were established by Charlemanges' order throughout the Carolingian Empire; just 200 years after the first schools were established in Britain.

Later these Bishops and Monastic schools had external schools for regular pupils, who were not interested in studying for the ministry or for monastic orders, but desired a secular education.

During this so-called period of scholasticism from the end of 8th, on into the 14th century, the Monastery and Monastic schools which had spread all over Europe, were the only source of higher culture and thus were the cradles of learning, controlling the destinies of the races in so far as the transmission of knowledge was concerned.

It was only natural during this period that religion should take such a prominent part in the peoples' life and it was the result of this deeply religious education that culminated in the building of the great cathedrals and other fine churches. Thus, the great enthusiasm that existed during the latter part of this and the immediately following Gothic period, in the building of the numerous magnificent Cathedrals is readily accounted for.

Limestone, on account of its easy working qualities, was the favorite material of the great Gothic builders.

Many of the finest Cathedrals of France and elsewhere on the continent and in England are built of Limestone. The Portland stone of England is quite similar though of a later deposit geologically, to the Oolitic Limestone of southern Indiana.

The earliest Universities, in a limited sense as we understand that term today, came into being in the 12th century and arose from the Monastic schools by the spreading desire for secular education, which was a spontaneous manifestation of the mediaeval impulse and the desire for knowledge in the arts and sciences.

Each of these earlier Universities was a specialized school of study. At Paris, the greatest of the Mediaeval colleges, it was Philosophy and Theology; at Salerno, Medicine; at Bologna, Roman Law. The German Universities were of later origin, Prague and Vienna being established during the latter half of the 14th century.

These schools gradually supplanted the Cathedral seminaries. When later expanded after they were firmly established, there were generally four faculties in all of these early schools; Arts, Theology, Law and Medicine.

With the Renaissance, the 14th century showed great intellectual activity; and the further establishment of schools and universities; with Italy in the forefront, as the feudal system still existed across the Alps in Europe. These educational institutions of the Renaissance we also find housed in fine structures, built largely of stone.

Thus the earlier traditions of housing the principal seats of learning in fine stone buildings was carried on through the middle ages, the home of the scholar, ever being associated with lasting structures of stone.

This brings us to the founding and establishment of the modern College and University. Again the tradition of building these structures of stone was very generally followed. We find examples of this all over Europe and on the British Isles. It is only necessary to mention Oxford, Cambridge, Dublin, Glasgow and Edinburgh to call to mind some of the venerable colleges of Britain and the many equally venerable colleges on the continent of Europe, that are built of stone.

Only in the low countries where good building stone was either not available or scarce, was brick, that very useful but commoner masonry material, resorted to for the exterior of these important educational structures.

The next step was the founding of the grammar schools and the development of the monastery schools into a larger system of schools for the training of the masses, rather than only the select few who, during the previous centuries were able to attend the Monastic colleges, or the Universities, that had been established.

The forerunner of our present day public school system was the Protestant schools and reformatories that were established in the 15th and 16th centuries, the school systems founded during the latter part of this period being the first of the more liberal educational system of the present day.

University life fell into decadence during the 16th and 17th centuries, but the end of the 17th century saw a revival of university life, which was an important step in the progress of learning and culture.

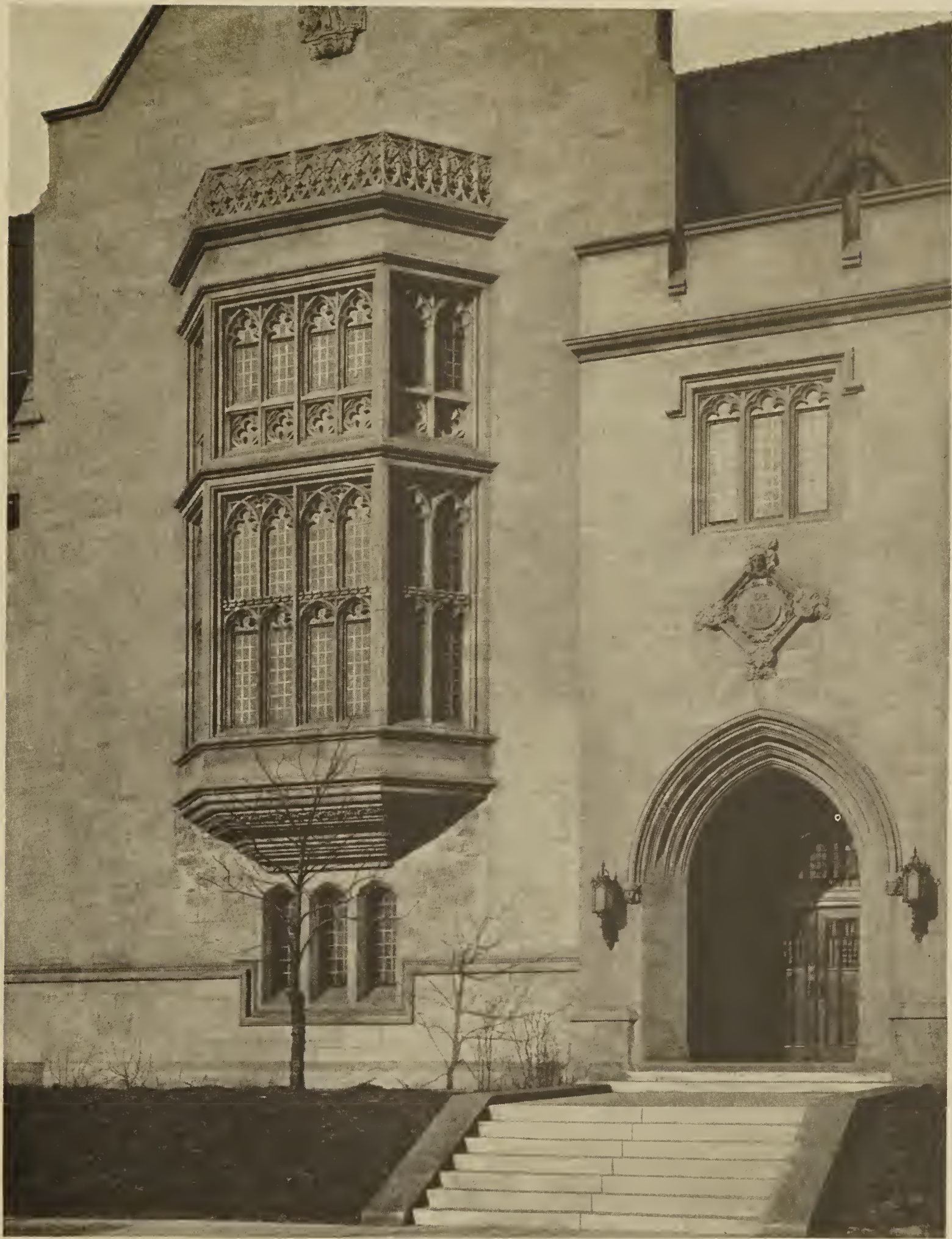
It was not until late in the 18th and during the 19th centuries that full control of the public schools was taken over and these schools maintained by the state, in accordance with the present system of free public schools.



PYNE HALL, PRINCETON UNIVERSITY, Princeton, N. J.

DAY & KLAUDER, Architects

A fine example of the use of local ledge stone in combination with INDIANA LIMESTONE trim. See also the view of this building on page 21.



DETAIL VIEW of BAY WINDOW and ENTRANCE, IDA NOYES HALL, UNIVERSITY OF CHICAGO, Chicago, Ill.
 SHEPLEY, RUTAN & COOLIDGE, Architects
Showing smooth machine finish RANDOM ASHLAR of INDIANA LIMESTONE See also the view of this building on page 69



THEODORE ROOSEVELT SCHOOL, Wyandotte, Mich.

B. C. WETZEL & CO., Architects



JAMES ALLISON INTERMEDIATE SCHOOL, Wichita, Kansas

LORENTZ SCHMIDT & CO., Architects

These two buildings show the contrast between light and dark colored brick with INDIANA LIMESTONE trim.

The "Old Gothic" and "QUARRY-RUN" grades of INDIANA LIMESTONE, which are especially suitable for the Field-work of walls designed in any informal style.

Old Gothic. This grade of INDIANA LIMESTONE is unselected as to color and texture, and embraces the gray, buff and variegated stone, varying in texture from fine to coarse, but generally of fairly coarse texture, some pieces containing shelly formations, white or crystalline streaks and tight crow-feet, etc., that do not affect the structural soundness of the stone. It will generally be found to include greater variation in color-tone and texture than the "Quarry-run."

The Old Gothic grade is not usually recommended for cut trim and moulded work, but principally for plain sawed wall facing, Random Ashlar work, etc.

In combination with Old Gothic, the "Variegated" grade may be used for trim with good effect.

Quarry-Run (short-length stock). This is the material that usually is lowest in cost and is the grade recommended as an alternate to the Old Gothic, for Random Ashlar work.

See pages 2, 6, 28 and 78 for illustrations showing this kind of stone work.



HIGH SCHOOL, Bethlehem, Pa.

RITTER & SHAY, Architects



CENTRAL HIGH SCHOOL, Muskogee, Okla.

DAWSON, KEDIAN & VALVER, Architects



SARAH SCOTT SCHOOL, Terra Haute, Ind.

JOHNSON, MILLER, MILLER & YEAGER, Architects

Three schools, all showing distinctive and entirely different treatments of the INDIANA LIMESTONE trim



MEMORIAL TOWER, DORMITORY QUADRANGLE, UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.
COPE & STEWARDSON, Architects

Just one of the many fine buildings at University of Pennsylvania that are heavily trimmed with INDIANA LIMESTONE. See School of Law Building on page 61

There is no finer material for the trim of brick walls. There is no other material that affords an equal medium for the executing of architectural detail. The Aristocrat of Building Materials gives distinction to plain brick walls.



PREVOSTS TOWER, part of the very interesting group of Dormitory Buildings at the UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa. The Memorial Tower which is shown on opposite page is another part of this group.
COPE & STEWARDSON, Architects

These two towers which form a part of one of the earliest examples of the elaborate English Collegiate Gothic style in America, are still one of the finest examples of that style executed in a combination of Limestone and Brick.

THE DESIGN OF SCHOOL BUILDINGS

Referring more particularly to the grade or elementary schools in an article on school design, in the April, 1921, issue of *Architecture*, Mr. Alfred Busselle, a prominent eastern architect, makes the following interesting statement on the proper design of school buildings.

"There is probably no problem in an Architect's practice that more calls for the quality of fitness of the design to express an emotional idea than that of the schoolhouse. If, as we claim, each building tells a story and creates a distinct impression, surely there can be no wider or more important field than that which so nearly affects the forming minds of children. It is not desirable, from any point of view, that children should spend much of their lives in buildings which are only distinguished from factories by the presence of the American Flag, or which are of a grandiose type—wholly exotic. . . .

. . . "Architects, in designing schoolhouses, have too often, and I might almost say generally, worked along the easiest lines and have been taken up by the consideration of cubic feet of air, number of changes per minute, square feet of glass area, etc., and have lost sight of any spiritual factor in their problem. The architect, in attacking a school problem, often first transforms himself into an engineer, and afterwards clothes the machine in such scanty architectural draperies as may allow him with reasonable grace to write 'Architect' on the drawings.

"I am speaking of the usual moderate-size building with reasonable amount of ground. In such cases it is possible to impart something of the domestic character and associate it closely with our best American tradition without sacrifice of mechanical efficiency or excellence of plan."

This spiritual factor, or so-called character, which Mr. Buselle refers to as so important, can best be given to the school building by an appropriate design, free of unnecessary ornamentation, honestly erected in good materials. There is no better material for the trim, or for the entire exterior of schools, than INDIANA LIMESTONE, which although the lowest in cost of natural stones, is truly THE ARISTOCRAT OF BUILDING MATERIALS.

Another prominent architect, Mr. Wm. Roger Greely, of Kilham & Hopkins, in writing for the *Architectural Forum*, on this subject, makes this very interesting statement on appropriate school design and its relation to cost:

"A schoolhouse is a contrivance to protect children from the inclemency of the weather while they are being educated," and then goes on to state the essentials such as walls, floors, roof, partitions, windows, stairs.

"Since it costs about as much to protect children from cold, wind and rain as it does to educate them and about \$1.00 of the taxpayer's money is spent to maintain buildings for every dollar spent to pay teachers, it is necessary that great care be exercised in the incorporation of the ornamental elements or beautifying factors in school design. The architect is even under the restraint of efficiency, cost, etc. His design dare not require the expenditure of an appreciable sum for purely ornamental detail or his costs will be thrown out of balance. It therefore behooves the designer of schools to employ materials simply treated, which of themselves provide the pleasing elements of beauty."

INDIANA LIMESTONE is the material that best satisfies this requirement insofar as the exterior walls are concerned.

While many will differ with the viewpoint that a school is to such a large extent simply a utilitarian structure or education factory, the efforts of even those who claim to entertain such views to add the elements of beauty to their work is both fortunate and a subtle acknowledgment that they always recognize its presence, as at least desirable, if not a very necessary element. In fact, Mr. Greely further on states,

"There can be no possible difference of opinion in regard to the advantage of beautiful school buildings over ugly ones," and "that the present conditions governing construction call for beauty of the simplest type, adapted closely to the most economical forms of construction." A requirement which INDIANA LIMESTONE so admirably fulfills.



Detail of ENTRANCE FRONT, LIBERTY MEMORIAL HIGH SCHOOL, Lawrence, Kan.
WILLIAM B. ITTNER, Architect



NORWOOD SCHOOL, Birmingham, Ala.

WARREN, KNIGHT & DAVIS, Architects

The two illustrations on this page show the appropriate use of INDIANA LIMESTONE trim in moderate cost grade school buildings

ATTRACTIVE SCHOOLHOUSES AND COMMUNITY PRIDE AND PATRIOTISM

(From an article on school building, in American School Board Journal.)

The spirit of community progress fostered by the many civic and commercial bodies found throughout the United States usually seeks its expression in tangible things. The citizen who is actuated by a touch of local patriotism points with pride to the handsome business blocks and spacious factory plants, to well paved streets and parks.

If he has an appreciation for the finer impulses and ambitions of the community he will point out the hospitals and churches, and the schools if there are any attractive schools to be pointed out.

The citizen who is proud of the economic studies his town is making, and does not forget the charitable tendencies of the people, cannot well overlook the intellectual aspirations as exemplified in dignified and well-equipped schoolhousing. Material success, after all, must find its ultimate expression in something besides fine business and industrial structures. These are the means to an end, and the end is an intelligent, orderly and contented citizenship.

Thus, the unit of population, be it large or small, city or village, that makes claim to being a worthy integral part of a great nation, must demonstrate a recognition of the agencies that train for citizenship.

These agencies are expressed in a series of good school buildings,



Entrance Detail CORLETT SCHOOL
Cleveland, Ohio
W. R. McCORNACK, Architect

and no unit of population without them can make any pretense to being progressive.

Nor are any of the public buildings found in the average community, such as city hall, courthouse or library, more capable of impressive architectural design than a schoolhouse, more particularly a high school building. And none could express the intellectual aspirations of the people more fittingly than the community's leading institution of learning.

Whatever may be said of economy in public expenditure, it follows nevertheless that in constructing school buildings some regard for exterior design should be observed.

This does not signify that any extravagance should be engaged in, but neither does it mean that such a structure must be reduced to the plainness of a factory building.

The average citizen is agreed that public buildings should be dignified in outline and form. They should prompt respect for government and authority. A schoolhouse should not only present grace and dignity as far as exterior outline is concerned, but should bear the touch of art as well. On the whole, it should be an inviting structure that pleases the eye and at the same time dignifies the cause of education and citizenship.

While a monumental character may be considered appropriate for high schools and colleges, an important point in the design of grade or other elementary schools is that a certain domestic quality should not be neglected. The current preference for varied adaptations of the Collegiate Gothic style and of the American Colonial in preference to other classic types, as the styles being generally the more informal and more spiritual and homelike in character, is a manifestation of this tendency.



ADMINISTRATION BUILDING, MERCERSBURG ACADEMY, Mercersburg, Pa.

DAY & KLAUDER, Architects



OOLITIC HIGH SCHOOL, Oolitic, Ind.

ELMER E. DUNLOP CO., Architects



ELIZA KELLY SCHOOL, Joliet, Ill.

HOEN, WALLACE & WEBSTER, Architects



F. E. MARSH SCHOOL, Joliet, Ill.

JOHN D. CHUBB, Architect

The two buildings show in contrast the appearance of the machine-tooled and rock-face finishes on INDIANA LIMESTONE



COBB HALL, UNIVERSITY OF CHICAGO, Chicago, Ill.

HENRY IVES COBB, Architect



HIGH SCHOOL, Bedford, Ind.

ELMER E. DUNLAP CO., Architects

INDIANA LIMESTONE is equally appropriate for the large City College and the small town High School Building



LAW SCHOOL, UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.

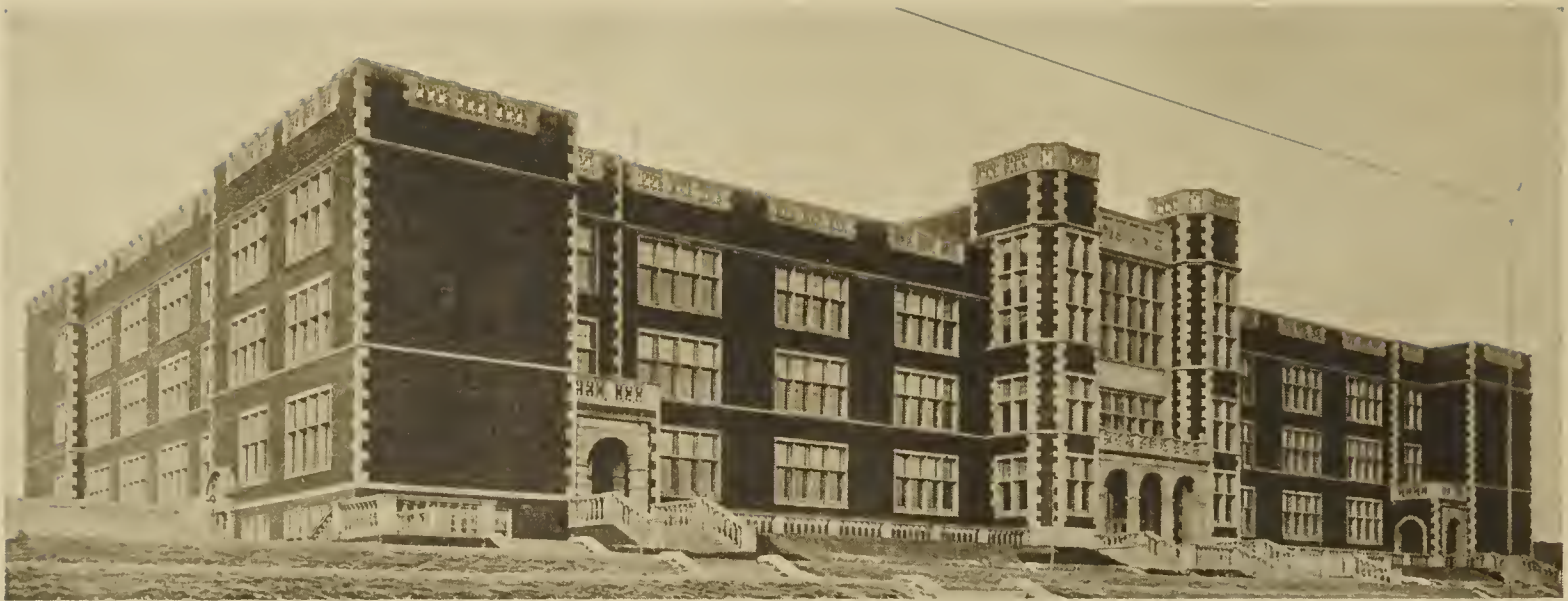
COPE & STEWARDSON, Architects



HATCH SCHOOL, Oak Park, Ill.

CHILDS & SMITH, Architects

INDIANA LIMESTONE is equally appropriate for the trim of the large college and the ordinary intermediate or grade school building



CENTRAL HIGH SCHOOL, Minneapolis, Minn.

W. B. ITTNER, Architect

See also detail view of this building on page 34



FRANKFORD HIGH SCHOOL, Philadelphia, Pa.

J. HORACE COOK, Architect



REED COLLEGE, Portland, Oregon

A. E. DOYLE, Architect

Six school buildings showing different treatments of the INDIANA LIMESTONE trim are illustrated on this and opposite pages



ACADEMY HIGH SCHOOL, Erie, Pa.

W. B. ITTNER, Architect



PRESCOTT SCHOOL, Lincoln, Neb.

FISKE & MCGINNIS, Architects



EASTERN HIGH SCHOOL, Washington, D. C.

SNOWDEN ASHFORD, Architect

Five different arrangements of window grouping are also shown on these two pages



WASHINGTON HIGH SCHOOL, Milwaukee, Wis.

VAN RYN & DE GELLEKE, Architects



BAY VIEW HIGH SCHOOL, Milwaukee, Wis.

VAN RYN & DE GELLEKE, Architects

The upper illustration show the blending in color-tone of INDIANA LIMESTONE with light colored brick and the lower illustration the pleasing contrast with dark colored brick, in two school buildings designed by the same Architects

OTHER LITERATURE OF INTEREST TO SCHOOL BUILDERS

A fairly complete list of the many fine School and College buildings in all parts of the Country that are either faced or trimmed with INDIANA LIMESTONE, has been prepared as a supplement to this volume. This list is being constantly revised and will be mailed to anyone interested upon receipt of postal request.

Specifications covering the cutting, handling and setting of the stone; specification for Random Ashlar masonry facing; construction details; data on mortars;

and other technical information, is available in the various other publications of the Association which will be mailed upon request.

Volume 1 of the Indiana Limestone Library, describing the physical and structural properties of INDIANA LIMESTONE, or Bedford Stone as it was formerly called, and containing a description of the quarrying and milling processes, will also be sent to anyone interested.

Address SERVICE DEPARTMENT, P. O. Box 500, BEDFORD, INDIANA
INDIANA LIMESTONE QUARRYMEN'S ASSOCIATION



NORTH INTERMEDIATE SCHOOL, Saginaw, Mich.

N. S. SPENCER & SON, Architects



BARBOUR INTERMEDIATE SCHOOL, Detroit, Mich.

MALCOMSON & HIGGINBOTHAM, Architects



JEFFERSON INTERMEDIATE SCHOOL, Detroit, Mich.

MALCOMSON & HIGGINBOTHAM, Architects

Three interesting treatments of grouped windows with INDIANA LIMESTONE trim



DUNHAM LABORATORY of ELECTRICAL ENGINEERING, YALE UNIVERSITY, New Haven, Conn. H. G. MORSE, Architect

This building shows an example of "RANGE" Ashlar work of smooth tooled finish Indiana Limestone. "RANGE" or "BLOCK in COURSE" work is less formal in effect than COURSED ASHLAR but not quite so informal in treatment and appearance as RANDOM ASHLAR work, examples of which are shown by the college buildings illustrated on pages 2, 6, 12 and 28.

Both forms of Ashlar field-work may be built of the rough sawed finish "Old Gothic", "Variegated," "Rustic" and "Quarry-run" grades of INDIANA LIMESTONE.

An example of very rough sawed or "Ripple-face" finish is illustrated on page 78.



Detail View of a Portico
ST. MARY'S of the LAKE
THEOLOGICAL SEMI-
NARY, Area, Ill.

JOSEPH W. McCARTHY,
Architect

A very fine example of the use of INDIANA LIMESTONE trim with brick walls, in group of college buildings designed in an adaption of the Colonial style.

Two other fine examples of somewhat similar types of Limestone trimmed brick designs, are shown by the college buildings illustrated on pages 9 and 12.

Note also the two fine examples of the use of INDIANA LIMESTONE trim in college buildings of Italian style illustrated on pages 44 and 45.



ST. MARY'S of the LAKE THEOLOGICAL SEMINARY, Area, Ill.

JOSEPH W. McCARTHY, Architect



CASS TECHNICAL HIGH SCHOOL, Detroit, Mich.

MALCOMSON & HIGGINBOTHAM, Architects



HYDE PARK HIGH SCHOOL, Chicago, Ill.

A. F. HUSSANDER, Architect



IDA NOYES HALL, UNIVERSITY OF CHICAGO

SHEPLEY, RUTAN & COOLIDGE, Architects

A fine example of Random Ashlar wall treatment at Chicago University. See detail view, Page 51



SCHOOL OF EDUCATION BUILDING, UNIVERSITY OF ILLINOIS, Urbana, Ill.

HOLABIRD & ROCHE, Architects

Showing also the use of coursed Ashlar in a building of similar type at Illinois University



PRATT SCHOOL of NAVAL ARCHITECTURE and MARINE ENGINEERING
a part of MASSACHUSETTS INSTITUTE of TECHNOLOGY, Cambridge, Mass.
WELLES BOSWORTH, Architect

A fine example of simple classic treatment see other views of this group on pages 18 and 19



Part of GARRETT BIBLICAL
INSTITUTE GROUP at NORTH-
WESTERN UNIVERSITY,
Evanston, Ill.

HOLABIRD & ROCHE,
Architects

An example of smooth
finish Random Ashlar of
INDIANA LIMESTONE. Com-
pare this with the rough-
sawed finish Random Ashlar
in the Evansville College and
Indiana University buildings
on pages 28 and 12.

*Showing in contrast a large college building of formal classic design and a small one having
an informal RANDOM ASHLAR treatment, both built entirely of INDIANA LIMESTONE*



WREXHAM TOWER & Adjoining Buildings, HARKNESS MEMORIAL, YALE UNIVERSITY, JAMES GAMBLE ROGERS, Architect
An example of INDIANA LIMESTONE trim in combination with Sandstone and seam-face Granite

SCHOOL BUILDING COSTS

On the subject of cost, it is only proper to mention that the cubic foot or square foot costs seem to be of lesser importance in school buildings;—the unit figure of importance is the cost per school room or cost per pupil provided for, and it is astonishing how comparatively little is added to the cost per pupil or per school room, by adding sufficient cut stone trim around the windows and entrances, to convert a factory-like wall of brick into an enclosure having a pleasing architectural character and a dignified expression of culture, that which, apart from its effect on the pupils, has an inspirational and gratifying effect on the community at large, who are the possessors of the structure.

In modern schools with flat roof the cubage per pupil may be slightly under 500 ft., but more usually is between 600 and 800 for grade schools and for high schools will average around 1,000 cu. ft.

Thus an increase as high as 2c in the cu. ft. cost of a school building will add only \$10.00 to \$20.00 per pupil, less than the cost of teaching that one pupil for half of a single year.



Entrance Bay of CLASSICS BUILDING, UNIVERSITY OF CHICAGO, Chicago, Ill.

SHEPLEY, RUTAN & COOLIDGE, Architects



Detail of Central Bay MILLBURN HIGH SCHOOL, Millburn, N. J.
GUILBERT & BETELLE, Architects

Since the investment in a school building will usually average around \$300.00 per pupil provided for, such an increase in the cost of the building per pupil, will therefore amount to only a very small percentage, of the total cost for building and equipment.

If a school does not at least stand second to the church or town hall in expressing worthwhile character, what may be expected of the other buildings of the country? If these buildings set the proper standard, the bank, the more important stores, the homes and last but not least, the factory or work shop, will usually in turn to some extent follow the example set.

Often commercial or industrial buildings and factories have been the first to set the pace, because the leaders of industry have recognized the value of appropriate character and dignity in building design. This should not be. The school, like the church, should always lead in the setting of high ideals. The unknown but lasting impression that is unconsciously made by it on the child's mind is of the greatest importance.



Entrance Detail at MEDINA HIGH SCHOOL, Medina, N. Y.
W. B. ITNER, Architect



Entrance Detail at MARSHALL SCHOOL, South Orange, N. J.
GUILBERT & BETELLE, Architects

On this and on opposite page, four school entrance features are illustrated, one of these being of Gothic and three of Classic design.

Two Classic style entrances are illustrated on this page, one showing a treatment consisting of free standing columns supporting an entablature with balustraded balcony above, and the other consisting of an arched opening set between pilasters with flush entablature and plain parapet wall above. The first gives a lighter and more open effect and the other a heavier and more massive appearance.

On page 35 an entrance front having carved ornament of great delicacy and refinement is shown.

On page 18 a colonnaded treatment of entrance in pure Grecian Classic style is shown.

On page 67 another type of colonnaded entrance is shown.



Detail Bay Window Trim, BOSSE HIGH SCHOOL, Evansville, Ind. J. C. LLEWELLYN CO., Architects

On pages 2, 51 and 74 entrances having still different Gothic treatments are illustrated.

The intricate carved ornament on the Summit High School, and carved quatrefoil ornament on the Bosse High School, page 74; the delicate tracery and pierced canopy work on the Classics Building, and the chaste simplicity of the Milburn High School entrance, on opposite page, all of distinctly different types, show the individual character of each type of treatment, and some of the varied effects that are possible in the execution of carved ornament in INDIANA LIMESTONE.

Still other effects are shown by the treatment of the detail and carved ornament of the entrance features, illustrated on pages 7, 11, 15, 18, 34, 35, 40, 48, 56, 57, 76 and 77, and by the beautiful interior work on page 79.



Detail View of SCHENLEY HIGH SCHOOL, Pittsburgh, Pa.

EDWARD STOTZ, Architect

The smooth rubbed finish as used on this building is considered the best by some Architects for cities where there is usually considerable soft coal smoke in the atmosphere. It will resist accumulating grime and stay clean longer, also can be cleaned down easier than the somewhat rougher surface finishes that are generally used.



(left)
Entrance Detail
BOSSE HIGH SCHOOL,
Evansville, Ind.
J.C. LLEWELLYN
CO., Architects



(right)
Entrance Detail
SUMMIT HIGH SCHOOL,
Summit, N. J.
GUILBERT &
BETELLE,
Architects

See Notes in reference to these entrance details on page 73



HARRIS
HALL,
NORTH-
WESTERN
UNIVER-
SITY,
Evanston, Ill.

COOLIDGE,
&
HODGDON,
Architects



SCHOOL
OF LAW
BUILDING,
UNIVERSITY
OF IOWA,
Iowa City,
Iowa

PROUD-
FOOT, BIRD
& RAWSON,
Architects

The buildings on this page show an interesting comparison between two ways of using a two-story column treatment, the one having columns set above a low basement with attic story above, and the other with the columns set above the first story without attic above.



MAXWELL HALL, ADMINISTRATION BUILDING,
INDIANA UNIVERSITY, Bloomington, Indiana
GEORGE W. BUNTING, Architect



Entrance Detail COMMERCE AND
FINANCE BUILDING, INDIANA
UNIVERSITY, Bloomington, Ind.
ROBERT F. DAGGETT, Architect

See general view of this building, page 12



CATHEDRAL SCHOOL, Wichita, Kansas

LORENTZ SCHMIDT & CO., Architects

Built of INDIANA LIMESTONE, backed up with Hollow Tile

The supplying of INDIANA LIMESTONE to School Builders:

Indiana Limestone is regularly shipped in both the rough and finished state to all parts of the United States and Canada. It is supplied principally through the cut stone trade; by that we mean the cutting plants, both in this producing district and the plants or cut stone yards that are located in all large cities and in many of the smaller towns.

Millions of cubic feet of it are used each year, and there is not a State in the Union which does not have a multitude of public and private buildings, both great and small, built of this fine natural stone.



Detail of CENTRAL BAY, THEODORE ROOSEVELT HIGH SCHOOL, Wyandotte, Mich. B. C. WETZEL & CO., Architects

While there are a great many large cutting plants located in the Indiana Limestone district, only a comparatively small part of the total volume of work is handled by these plants.

On account of the regular demand for this material there is never any delay in awaiting the quarrying operations, as ample stocks of the regular grades are usually carried by the stone yards already referred to.

The Indiana Limestone Quarrymen's Association has nothing to do with the sale of the product but will at all times be pleased to put prospective users in touch with the concerns who can promptly serve their requirements.



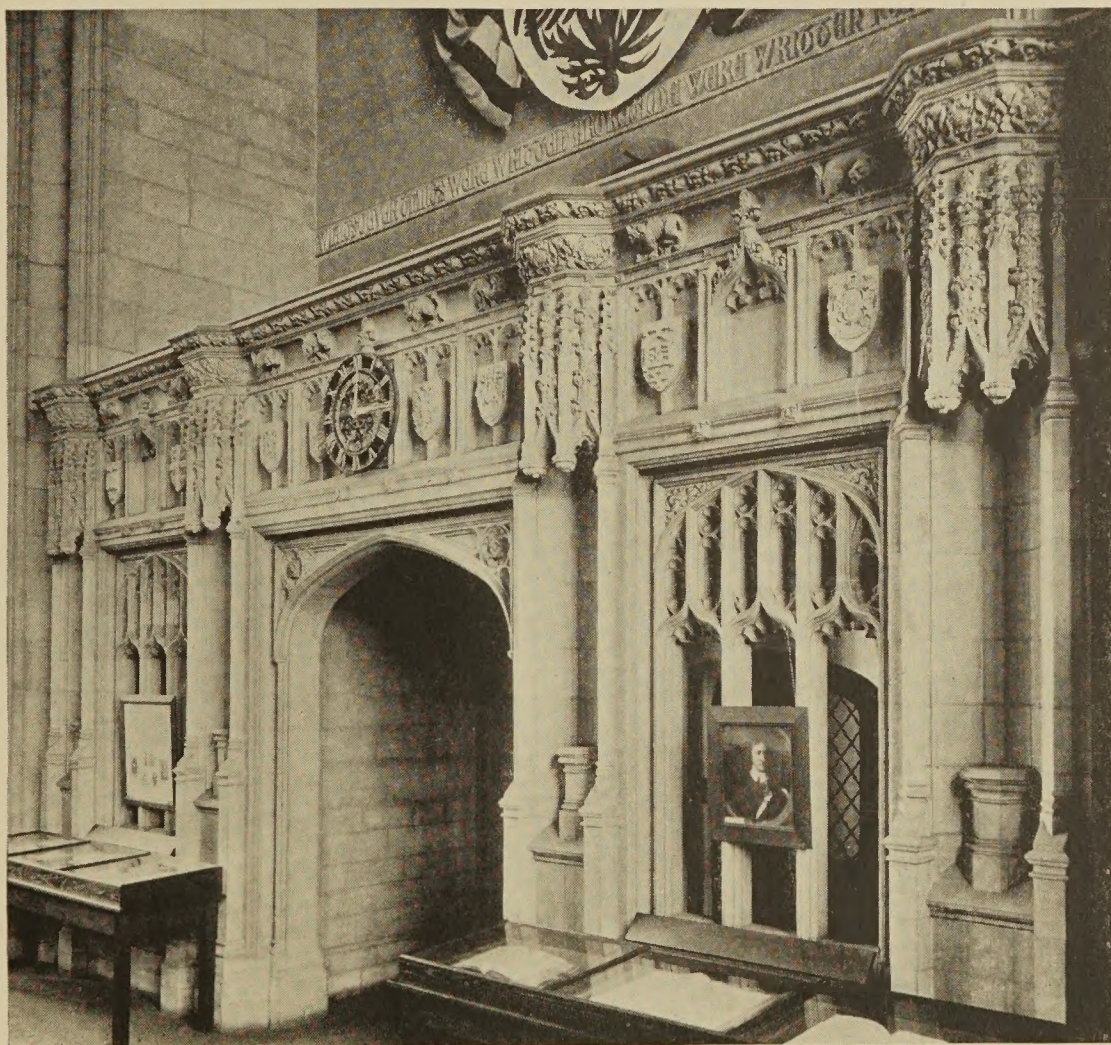
HARKNESS MEMORIAL RESIDENCE HALLS, YALE UNIVERSITY, New Haven, Conn. JAMES GAMBLE ROGERS, Architect
Detail view showing shot-sawed, or "Ripple-face" finish INDIANA LIMESTONE in one of the Courts



(above)

INDIANA LIMESTONE Interior
in the HARPER MEMORIAL
LIBRARY BUILDING at UNI-
VERSITY OF CHICAGO.

The exterior view of this building
is shown in color on front cover.



(at left)

Detail view of the beautifully
carved INDIANA LIMESTONE
SCREEN at the far end of this
dignified interior.

COOLIDGE & HODGDON,
Architects

There is no other stone
so well suited for sculptured
detail and elaborately carved
interior work, as well as for
exteriors, and no other stone
that can so readily and so
economically be worked in
this manner. INDIANA LIME-
STONE is truly the Aristocrat
of Building Materials.

INDIANA
LIMESTONE
The NATION'S BUILDING STONE



HIGH SCHOOL
Kearny, N. J.

GUILBERT & BETELLE
Architects

THIS VOLUME, like the school which is illustrated above, is DEDICATED TO THOSE WHO SEEK KNOWLEDGE:—A knowledge of the *best and most economical* material to use for school buildings.

INDIANA LIMESTONE QUARRYMEN'S ASSOCIATION

INDIANA LIMESTONE

A product that will
age gracefully and
assure you buildings
of Dignity, Beauty
and Permanence:—
Schools and Colleges
that you will justly
be proud of as a
credit to the Nation
and to the progress
of your Community

The NATION'S BUILDING STONE
IS IDEAL *for* SCHOOLS